THE MEDICAL NEWS.

A WEEKLY JOURNAL OF MEDICAL SCIENCE.

VOL. LXXVII. NEW YORK, SATURDAY, OCTOBER 6, 1900. NO. 14.

ORIGINAL ARTICLES.

INTERNAL SECRETION OF THE OVARY.

BY ARTHUR W. JOHNSTONE, M.D.,

OF CINCINNATI, OHIO.

RETAINED excretions are the causes of nearly all nervous conditions, whether at the menopause or during menstrual life. This is a commonplace statement to many of you, and those who have been general practitioners have utilized it in the handling of both their male and female patients; but some have lost sight of it in the recent furor that has been raised over the "internal secretion of the ovary."

Under ordinary circumstances this paper would be entirely out of place, but when the President of the British Gynecological Society, in his last presidential address, 1900, assumes that the ovary has an internal secretion, it is incumbent on those who do not believe it to bring forward the proofs of their faith.

There is not an iota of proof that the ovary has any other function than the manufacture of eggs. For fifty years we have known that the ovary is active during intra-uterine life and that it begins to ripen Graafian follicles at the sixth month of gestation; that this continues rather rapidly until after birth; that during infancy the Graafian follicles still ripen occasionally, but not as rapidly as before birth, and persist in the same ratio up to puberty. At puberty the follicles ripen more rapidly, at least five or six a year, but at no time do they amount to as many as the number of menstruations in the year. This rate continues during the whole of the child-bearing period. During and after the menopause the Graafian follicles still continue to ripen. Of all the ovaries past the menopause that I have removed, I have never found one that did not possess a small number of Graafian follicles in an immature state, and I have frequently found those that have recently ruptured.

The ovary is in no sense a gland. Its epithelium is arranged for the purpose of being cast out and lost, and is not placed so that its secretions, if it has any, could be absorbed either by ducts or blood-vessels. The adherents to the internal-secretion theory claim that it is like the suprarenal, the thymus or the thyroid gland. This I can state positively is not correct. Years ago I made careful studies of these organs. The thymus gland is nothing but the large lymphatic gland which does the work of the lymph structures during intra-uterine life. Its lymph vessels are just the same as those of the axilla or groin. The thyroid gland and suprarenal capsule have no lymphatics that amount to much, but a very rich supply of blood-vessels so arranged that each epithelial cell is closely approximated to a venous radical, thus providing for a rapid absorption of whatever secretion its cells may make. As far as we know these cells are never entirely removed except by a low form of colloid degeneration, which colloid material is readily absorbed by the blood-vessels close to it.

But the ovary has a true duct through which its epithelium when cast out passes off *en masse* to the outer world. In the erect animals the Fallopian tube has great mobility and can attach itself to any particular part of the ovary, but in the dog and wolf the fimbriæ are united to each other and embrace the whole of the ovary and are attached to its base, so that there is no communication between the tube and the peritoneal cavity. This difference is for the reason that the eggs in the dog are ripened in groups, and as the tube has more than one Graafian follicle to deal with at a time, it must surround the whole of the ovary so as to catch everything that comes from it, thus providing a sewer down which everything must pass which comes out of the ovary. Therefore the analogies about which so much has been written do not hold good anatomically. Had the propounder of this dogma made any allowance for menstruation as a separate entity, free from the domination of the ovary, he certainly would have paused before announcing any such doctrine.

If it is a lack of an internal secretion that causes the nervous disturbances of the menopause, why is it that the little girl does not have them? But more unanswerable than this, why is it that a delayed menstruation in a child-bearing woman will produce identically the same symptoms as those of the menopause? This is apparent in all of our every-day work. Let me relate a striking instance.

Last autumn I had in my private hospital a splendidly developed woman of thirty-two, from whom I had removed the whole uterus and both ovaries for a degenerated fibroid. Of course, she had all the hot and cold flashes and nervous disturbances that usually go with such conditions. In the adjoining room was a beautiful young woman of twenty-two, whom I had curetted for an extremely severe form of catarrhal inflammation. She had for years been in the habit of having a five- or six-weeks interval between her menstruations, and it so happened that her menstruation was due at the time that I did this hysterectomy. Until her period appeared, which was some ten days late, the complaints of the two women were identical, but their condi-

tions totally different—one with the whole of her internal organs of generation gone and absolutely nothing with which to let off the menstrual wave, the other with all her internal organs in place, the only difference being that the flow was delayed. Instances of this sort I could multiply from my hospital records by the hundreds; and all that we need is to have our attention called to it to recall scores of cases of the same thing. I think, therefore, that I may lay it down as a rule that if a woman's menstruation is for any reason, except pregnancy, delayed, she is very apt to have symptoms closely approximating those of the change of life. This leads me to believe that the internal secretion of the ovary is a myth. It is the last stand of those who have believed that the ovary dominates everything, and they have taken refuge in the recent experiments showing the immense necessity for glands that we know do have an internal secretion.

Some German professor, who heard his confrère in the chair of practice talking about the wonderful results from thyroid extract, was not going to be outdone in his scientific knowledge, and so assumed that the ovary also had an internal secretion, and immediately began giving ovarian extract to his hysterical patients. He, of course, obtained wonderful results. Some will ask, "How is one going to explain away these results?" We all know perfectly well that if we are positive enough with these hysterical women we can get results with anything. I have frequently succeeded with a combination of salt and soda. This was a suggestion of some of my level-headed nurses, who, after having become worn out with the complaints of some of these people years ago, found that the more horrible the taste of the stuff they gave them the more profound the result would be. Some will ask, "How about the results from transplantation of the ovary?" My answer is that they are so few and far between and altogether unsatisfactory that they probably belong to the same class. Those few who have been benefited have gotten it not from the ovary but from the disturbance of the menstrual nervous mechanism produced by the secondary operation. This has brought on menstruation which, as is well known, is the one great eliminator.

Twice in my life I have brought on a menstruation by removing the appendix. In neither case was the appendix in the pelvis, but lying tightly tied down to the psoas muscle, where the ligatures necessary to control the vessels of its mesentery had to go so deep that the nerve-trunks coming up from the pelvis were involved. The operations were done half-way between the menstruations, and at no other time had the menstruations returned in two weeks, but in both cases they followed in forty-eight hours after the operation; so with this experience I believe that if the menstrual centers in the cord have not degenerated, a disturbance of the menstrual nerves by any kind of an operation is liable to bring on an artificial menstruation, similar to one that follows the ordinary removal of the ovaries. This is reinforced by several other cases that I have seen, in which, without operation, appendicitis itself has brought on menstruation at times when it was not due.

Nature has its great cycles of rest and work. The alternation of the seasons is the one great object lesson which we constantly have about us. The rest of a plant during the winter corresponds to the condition of the woman in the intermenstrual period. The shedding of the leaves of the evergreen, the manufacture of its young leaves and buds, as we now see it around us, corresponds to the menstrual week. The shedding of the horns and hair of the deer is another analogy of the same sort. The molt in birds is another illustration of the same thing, for, as is known, the old feathers have to be dropped and new ones manufactured at a rapid rate. Those who have ever watched a pet canary will be struck with the similarity between its condition during the molt and that of our patients during the few days antecedent to the menstrual flow. The molt is always considered a critical time for birds. They all stop singing, breathe more rapidly, the exposed parts of their skin become more congested, and everything goes to show that an increased oxidation is going on throughout their entire body. The reason for this is shown in the rapid growth of the cores of the young feathers, which have to make immense masses of protoplasm in a short time. An analysis of their excretions shows that oxidation is going on much more rapidly than in the ordinary state.

Just so it is with the woman. When the time arrives for the menstrual pressure to begin, associated with the congestion of the pelvis is an increased oxidation of the whole body, and, as I have maintained so often, and which has been so thoroughly proven by Jacobi, Stephenson and other workers, the result of this oxidation is an increased amount of excretion of every description. The majority of women stand this beautifully. The reason for it is this, if I may be permitted the illustration of a furnace. The draft is what it should be, the grate-bars are properly placed and the fuel burns up completely and passes off through the chimney, the ashes fall out into the ash-pit leaving no clinkers, coke or cinders behind. But, unfortunately, the furnaces of many people are defective in construction. The flue does not draw as it should, the grate-bars do not let in the required air, and the consequences are that the chimney gets choked with soot, and the fire-box retains cinders, clinkers and fuel in different degrees of consumption. For the lack of a better term these people have been classed as the "gouty," and they are the very people who give us the greatest trouble at the menopause. I have often said that if I know the family history of a patient, I can tell positively whether she is going to have trouble in getting through with the change of life. As we all know, here in America, we do not have gout

to any great extent in its explosive forms, but in our dry climate these poisons exert their action on the nervous system, so that our patients with sick headaches, migraines and general nervous conditions are the lineal descendants of European families who were loaded with gout. Haig is undoubtedly on the right track. I do not claim that uric acid is the poison which causes all this trouble, but I do know that the uric-acid group has a great deal to do with it. My friend, Dr. Rachford of Cincinnati, has done a great deal of original work in this particular line, and I am indebted to him for most of the suggestions that have guided me in the handling of these troublesome cases. He has proven beyond a doubt that in addition to uric acid there are many poisons that belong to the nitrogenous group.

We know that urea is the complete oxidation of a nitrogenous compound; that uric acid is the same material, but not completely oxidized; that the various xanthin bodies are the same substance, but still less oxidized, with paraxanthin at the foot of the group in the shape of a nitrogenous body that is only very slightly oxidized.

To take the illustration of the furnace again, urea corresponds to the ashes at the bottom of the pit; uric acid to the coke still left lying on the grate-bars; the various forms of xanthin to coal less and less burned, until we come to the paraxanthin, which is the coal little more than charred.

Dr. Rachford's work has turned on the poisonous properties of these various nitrogenous bodies. He has proven that paraxanthin is the most poisonous of all; also that where we have large quantities of uric acid in the urine some of these xanthin bodies are apt to be found. Several cases of hystero-epilepsy in my practice have been proven to be directly due to the presence of xanthin bodies and the epileptic convulsions were nothing but the characteristic symptoms of its toxic effect. By increasing the oxidations of these patients he has gotten rid of the paraxanthin, and although some of the cases were four or five years old they now remain perfectly well.

It would consume entirely too much time to go deeply into this subject, but those who are interested in it will find it in the Transactions of the Association of American Practitioners, where a great deal of notice has been taken of it. It is true that Dr. Pfaff has found that the presence of ammonia in Dr. Rachford's final fluids has intensified the effect of the poisons, but as we all know that ammonia in itself is not specially poisonous and that without the paraxanthin it will not produce any such symptoms unless it be given in large doses, it only proves that the ammonia compounds of the xanthin bodies are more readily diffusible and more violent in their effects than the substance in its pure and simple state. This is a condition, however, of many drugs—the salt has a more violent effect than the pure article.

Many menstrual headaches are undoubtedly due to something of the same cause. The increased oxidation of menstruation in a gouty subject will increase the number of poisons toward which the patient has a tendency; for this increased oxidation in a menstruating, gouty woman acts like the throwing of more fuel on an already smoking fire.

Assuming that this is the cause of not only menstrual but menopause difficulties, I have for years treated all my cases of either sort by increased elimination, and I am happy to say with uniformly good results. I have had but two cases which gave me trouble in getting them through with the artificial menopause, and both of them were in markedly gouty females. One of them had an uncle, a practising physician, who brought the patient to me after a violent attack of peritonitis that necessitated the removal of the appendages. She made a prompt recovery from the operation, but in the years that followed it was interesting to note how her symptoms corresponded with those of her uncle. It was nothing more than hereditary gout accentuated by the attempts at increased oxidation every twenty-eight days.

The other case was similar in every respect. A markedly gouty history, with a chronic peritonitis that demanded a life-saving operation, although she gave me a great deal of trouble for the first year; finally Dr. Rachford succeeded in making her very comfortable.

Dr. Rachford's work is not yet complete on these bodies and it would be unjust to him to anticipate, but I can say that, thus far, his results have been extremely satisfactory as applied to my work, that in addition to the xanthin bodies we will ultimately find a great many other poisons which are the results of faulty oxidation and its resultant elimination.

So, then, I repeat, there is not an iota of proof, either from analogy or experience, that the ovary has any kind of an internal secretion, but that the troubles which accompany the menopause, both natural and artificial, are due to a faulty oxidation and excretion.

One other cause of this condition is due to the intestinal infection that goes with nearly all these cases, and this allows the colon bacillus and its associates to contaminate the nitrogenous bodies with their ptomains before they are absorbed into the blood. Faulty excretion allows the liver to become "stagnant," as the old practitioners used to say, thus interfering with the circulation of the portal vein. This allows the germs of the intestine to lodge in its epithelial lining. This subject has been discussed frequently, especially in that memorable paper of my old teacher, Dr. Goodell, on the hysterical rectum. Each effort at an increased oxidation only adds to the trouble of a sluggish portal circulation, and thus invites the very condition I have described. This gives one more proof of the necessity for a careful study of the menstrual wave in all its bearings. Until we get rid of the old superstition of "ovarian influence" and similar terms which we have

heard for so many centuries, the reproductive functions will never be thoroughly understood. The last few years' experience has taught me to believe firmly that the ovary, in itself, has little or no influence even on the development of a woman and much less on her well-being after menstruation begins.

Some eight years ago I removed both ovaries from a little girl of eleven who had never menstruated, for double ovarian tumor. She was in every sense a child, and I thought there would be one case of a true female eunuch. What was my surprise a year or so ago to have one of the most beautiful women I ever saw walk into my office. It was this same child come back to show herself. I examined her carefully. Her figure had rounded out to perfection, her breasts were very large and perfectly developed; all the external organs of generation and the vagina were perfect, and the hair on the mons thick and fully grown. In every sense she was as perfect a woman as I ever saw, except that she never menstruated. More than this, she has a beautiful voice.

You will ask how this happened. My belief is that the sexual centers had already begun to develop before the ovaries were removed, and that was all that was necessary to produce every sign of puberty except menstruation. I would wish that others would look up these cases, because I know that many practitioners have had more of them than I have, and I would like to know whether these girls who are operated on before menstruation begins usually develop into full womanhood. If this is the case, the ovary will have to be relegated to the function of producing eggs alone. When we see every other organ in the body controlled by the central nervous system, why is it that we will persist in saying that this one little epithelial body contains all the functions known to womanhood? The only reason that I can see for it is that it originated in an old superstition, and, like every other superstition, will last as long as men will consult the moon before planting their potatoes.

Some will ask, What, then, are my beliefs as to the limits of conservative surgery? My answer is, Where an ovary and its accompanying tube can be left in a healthy condition so that their functions can be easily and safely carried out they should be preserved, but I have nothing but condemnation for those dangerous experiments which result in the leaving of a scrap of one ovary in one part of the abdomen and a piece of a tube in another, or the transplantation of an ovary from one patient to another. Suppose that we could accomplish what we desire—the preservation of menstrual life—what good would it do? It is only postponing the menopause; and the troubles that a woman has at the menopause are hereditary, and what difference does it make whether she goes through them early or late? All of this talk about the shrinkage and atrophy of the external generative organs at the artificial menopause has not held good in my experience, except where I have been careless enough to overlook a metritis or vaginitis. In a few cases of this kind, in my early practice, I did have a form of cirrhosis of the vagina set in, but after I found that that was the cause of the trouble and proceeded to cure it with yellow oxide of mercury, I have had no more trouble of this kind.

In conclusion, I would say that all of this furor about the internal secretion of the ovary only results in bad work, as it gives a cloak for leaving patients in dangerous conditions, and an excuse for not doing the tedious part of our clinical work.

INTERNAL ANTISEPSIS.[1]

By REYNOLD WEBB WILCOX, M.D., LL.D.,

OF NEW YORK;

PROFESSOR OF MEDICINE AND THERAPEUTICS IN THE NEW YORK POST GRADUATE MEDICAL SCHOOL AND PHYSICIAN TO THE HOSPITAL; PHYSICIAN TO ST. MARK'S HOSPITAL.

I AM fully aware that in presenting this subject I am giving opportunity for the expression of widely divergent opinions and that I am entering upon a territory which has been the field of fierce combat. But when this discussion shall have been finished I am sure that, if the distinguished gentlemen who have taken part are not entirely in accord as to its possibility or the means of accomplishing it, they certainly will agree that some method of attaining internal antisepsis is desirable and that, at least, some progress has been made toward it.

It goes without saying that in the treatment of infectious diseases lies the field of internal antisepsis. Strictly speaking, then, in septicemia, this should be useful and possibly in some pyemias the pus foci of which are not accessible to the surgeon. In presenting this subject surgical methods are not decried, but, on the contrary, as prevention is of far greater importance than cure, any infection-focus capable of being treated surgically should receive that kind of attention. This paper is not a plea for the substitution of medicine for surgery, but for a method of combating infection when surgery fails.

1. Is internal antisepsis possible? If we assume that the picture usually presented by septicemic patients denotes general infection, and that these symptoms—chills, malaise, headache, fever with remissions, restlessness, marked prostration, sweating, muttering delirium—and these signs—red and glazed, later leathery tongue, a full and bounding pulse which later becomes compressible, enlargement of the spleen and hypostatic congestion of the lungs—indicate septicemia and establish the diagnosis, that under the administration of remedies which are taken into the circulation these symptoms and signs are relieved and become less evident and finally recovery ensues, the suspicion may be entertained

[1] Read before the Medical Association of the Greater City of New York, May 14, 1900.

that the remedy may have been the cause of the recovery. If this association of remedy and relief becomes absolutely constant, or fairly constant with explainable failures, the suspicion may become well established opinion. To be an antiseptic, a remedy must either prevent the growth of, or completely destroy, the micro-organisms. To be efficient the substance must come in contact with micro-organisms wherever found. That micro-organisms have as wide an area of distribution as the blood is well known. If an internal antiseptic is efficient not only must the symptoms referable to bacterial activity be diminished or abolished, but evidences of their presence must be wanting in the excreta, sputum, feces, and urine. Let us see how far each method of demonstration may be applied.

Enteric fever is beyond question an infectious disease. The later stages, at least, are the full development of septicemia. Chlorine, as I pointed out in my Albany paper in 1895, cleans the tongue, improves appetite and digestion, lessens the fever, and frees the stools from odor save that of the drug used. The general strength, intellectual processes and nervous conditions improve. The disease is shortened in duration and usually proceeds to a rapid and complete recovery. The histories embodied in my first report were those of long-continued enteric fever, observed at Bellevue Hospital, and usually promising but little hope of successful treatment. My second report in 1899 was based on quite as difficult subjects—returned soldiers from the Spanish war—and was equally emphatic. The observations merely confirm the experience of East Indian physicians who have employed chlorine for many years. More widely known are the papers of Yeo on this subject.

The second method of obtaining confirmatory evidence, by examination of the sputum, has been practised with considerable success. The administration of creosote, especially the carbonate, when prolonged is followed by a diminution of the number of the bacilli of Koch found in the expectoration, as has been shown by Holscher and others. Certain volatile substances which are excreted by the respiratory surface are efficient, particularly the terebene obtained from the *melaleuca*, as has been demonstrated by Forne.

The third method of proof is illustrated by the observations of Bouchard upon the results of the administration of naphtol for various conditions found in the alimentary canal when the number of pathogenic bacteria found in the feces was very markedly diminished. Quite in harmony with these observations were those of Hueppe, who found that no cultures could be made from the intestinal contents of a patient who had died from apoplexy supervening during Asiatic cholera and who had been treated by bismuth tribromophenolate exclusively. In other and exactly similar instances, when tannic acid injections had been used, cultures were made without difficulty.

There is a necessity for important work in examination of the feces to note the results of the administration by the mouth of various antiseptic and germicidal substances, which I trust may be recognized at no far distant time.

By the fourth method of proof, examination of the urine, we may establish certain facts. It has been known for some years that the large majority of patients suffering from enteric fever discharge large numbers of the bacilli of Eberth in their urine. Quite recently Richardson, Horton-Smith, Gee and Andrews have demonstrated that hexamethylen-tetramine will cause an entire disappearance of these bacilli when it is administered by the mouth. A method which has been employed for determining the value of certain plans of treatment calls for a word in passing. I refer to the urinary toxicity and its observed variations. While changes in the urotoxic coefficient might be assumed to indicate variations in the elimination of toxins by the kidneys, this method of research was sufficiently seductive to have led several observers to place faith in it as an accurate method. Since, however, it has been shown that even urine from presumably healthy individuals when injected into animals produces varying results, according to the species to which the animal belongs, and further inconstant results even in animals of the same species, the findings from injections of urine from infected subjects are still more unreliable. Until we have a method of obtaining the amount of toxins excreted by physical or chemical methods this plan should be abandoned, as giving rise to misleading results.

2. Can it be detrimental? To this question must be given a decided affirmative answer. The fact is well known that certain substances which *in vitrô* are most trustworthy antiseptics are poisonous in the body. Instances of fatal poisoning by phenol, iodoform, corrosive sublimate and others, are too frequent to be ignored, and these must be eliminated from the list of remedies which we may employ for the purposes discussed in this paper. Those substances which are locally irritant act unfavorably upon tissues or destroy blood corpuscles must be barred. One question is frequently raised—and particularly with reference to intestinal antiseptics—are not bacteria essential to digestion and absorption? In rendering the alimentary canal free from pathogenic bacteria, are we not interfering with the nutrition of the patient? While it is true that certain loosely-held chemical compounds, as salol, bismuth salicylate and others, are broken up by bacterial activity, the preponderance of evidence is largely against bacteria of whatever kind being necessary. Confirmation of this opinion which is held by Nencki, Nuttall and Thierfelder is furnished by Levin from his observations in the Arctic region. While there he found that the intestinal contents of polar bears, seals, eider ducks, and other birds, sharks, sea-urchins, anemones and crabs, were nearly always sterile. Neither could cultures be made nor bacteria be found.

3. Under what conditions may it be employed? In the first place, any focus of infection which is amenable should be treated by surgical intervention. Further, infections resulting in septicemia in which the toxins are most potent in causing danger should be neutralized by antitoxins. I refer especially to diphtheria, in which the toxin elaborated by the Klebs-Löffler bacillus is presumably more important than the bacillus itself. On the contrary, in those cases where streptococcic infection is of most importance, either as primary or secondary, and where the serum treatment is at best not thoroughly established internal antisepsis must be carried out. As for the condition of the patient, great care must be exercised in administering remedies which may act unfavorably on the heart or kidneys. For instance, in acute polyarticular arthritis, which is nowadays generally admitted to be an infectious disease, salicylic acid must be given with caution if the kidneys are not sound. Also, in chronic dysenteries naphtalin will produce violent cystitis if any irritation of the bladder be present. Almost all of the phenol series are marked heart-depressants and should be administered with care to those whose hearts are incompetent. Naphtol and some of its derivations produce acute indigestion; this list might be further extended. To sum the matter up in a few words, kind Providence is just as watchful over the pathogenic bacteria as over their unwilling host and care must be exercised that in destroying the enemy the patient does not suffer. Obviously, when structural degenerations have become established, this, in company with all other forms of treatment, fails. Lastly, a recent writer may be quoted with profit, as follows: "Bacteriologists often make the mistake of denying the efficiency of minimum doses of so-called intestinal antiseptics, simply because the bacteria were not killed by their agents; they forget that exceedingly small quantities of these substances might paralyze the bacteria and prevent them from forming toxins, even though powerless to kill these organisms."

4. How is it best obtained? This may be best considered by dividing our agents into groups.

(*a*) The general internal antiseptics, such as chlorine, silver, the salicylates and quinine. Chlorine has been known as a disinfectant from the time of Halle (1785). When administered by the mouth it is in part changed into chlorides by combination with alkaline bases in the stomach or blood and in this form is excreted by the kidneys. Edwards, however, showed that all is not so combined, for in a fatal instance of enteric fever the necropsy showed enormous ulcerations in the intestines which were dyed a greenish-brown color. If inhaled it permeates all organs and tissues and even penetrates to the brain. Cameron reported that in a fatal instance of chlorine-poisoning, the distinct odor of chlorine was perceived in the brain. Further evidence is to be found in the fact that when administered by the stomach, the nose being held, the odor of chlorine is noticed in the breath within a few minutes. Locally, chlorine is irritating, quite so to the respiratory and but slightly to the alimentary mucous membrane. If given internally in moderate doses it quickens respiration, increases the force and frequency of the pulse and excites the functions of the organs of secretion, notably increasing the flow of saliva and of bile, the latter an antiseptic of no mean value. Because of its action on the kidney it is presumed that the toxins already formed are more rapidly eliminated. As factors of less importance are its stimulating effect upon the heart and increased digestive power. In the treatment of enteric fever the results already noted are quite constantly obtained. The class of cases for which I have reserved the use of chlorine are those which have come under my observation late in the course of the disease. They have frequently run the gamut of the so-called Brand treatment, either mitigated or unmitigated, expectant or hopeless methods or even of intelligent let-alone management. The chlorine water of the Pharmacopœia, freshly made, in doses of from one to four fluiddrams every two to four hours, well diluted, has been amply sufficient. After reading Sanulli's argument a few years ago that in this disease the intestinal lesions are the result of the toxins circulating in the organism infected by the germ of Eberth, and that this is the principal cause of the material manifestations and morbid phenomena which go to make up the clinical picture of enteric fever, I was tempted to commence the treatment in its early stages with chlorine. Formerly, I had employed such insoluble antiseptics as bismuth naphtalate, various preparations of salicylic acid and naphtalin. In a few instances the results were not satisfactory from a clinical standpoint, so that I was forced to believe that Sanulli was wrong in his conclusions. How far chlorine may be of use in other infectious discases I am not at present prepared to state. In a recent instance of septicemia, resulting from a pulmonary abscess consecutive to a septic pneumonia, although the interval between the extreme oscillations of temperature were appreciably lengthened and the fetor of the breath lessened, the amplitude of temperature excursion was not diminished.

Silver has been recently suggested for use as an internal antiseptic. It was about 1890, I think, that Carey Lea showed that silver existed in allotropic form. Seven years later Credé made use of colloidal silver, so-called, in medicine. This is almost entirely soluble in water and albuminous fluids and seems to inhibit the action of staphylococci and streptococci or destroy them altogether. For internal use, to prevent its conversion into a chloride in the stomach, it is first dissolved in equal parts of albumin and glycerin. Since it is unirritating, it may be administered hypodermatically in aqueous solution. In the early days of its employment it was rubbed in a fifteen-per-cent. ointment. Resort has been had to rectal and intravenous injections.

The dose is about one-sixth of a grain, two or three times daily. Credé claimed that it had a very beneficial influence and often affords a rapid cure in recent and also in chronic sepsis and furunculosis, when secondary changes in vital organs have not occurred. Various conditions have been treated; osteomyelitis, phlegmonous angina, furunculosis, erysipelas, so-called gonorrheal and articular rheumatism. Various reports, some very enthusiastic, have been presented; on puerperal fever (Peters, Jones, Voorhees), cerebrospinal meningitis (Schirmer), acute mastitis (Cumston), malignant scarlet fever (Credé), diverse septic processes (Werler), furunculosis (Wolfram) and, finally, purpura in the horse (Dieckerhoff), which according to this author is due to the introduction of a special virus into the blood of the animal. Schlossmann has shown that this substance is non-toxic and unirritating to mucous membranes. Thus far no instance of argyria has been reported. My own experience with septic phlebitis in which an unusually large percentage has occurred in patients suffering from enteric fever has been more satisfactory. Here it has been employed by inunction for thirty minutes. In one instance of septic phlebitis following amebic dysentery the results were almost marvelous.

The use of the salicylates in acute polyarticular rheumatism is too well known to require more than passing mention. The only point of importance, not generally considered, is that while salicylic acid is antiseptic the salicylates are not; the question is, therefore, to choose substances which yield salicylic acid within the organism. Malarial fever is a disease resulting from an infection if the investigations of Ross, Manson and Bignami are accepted. Quinine, then, preferably as a carbamide, given hypodermatically, is a method of internal antisepsis applied to combat an especial infection.

(*b*) To combat infectious processes having their most active manifestations in the alimentary canal is no new problem. Many methods of treatment depending more or less upon internal antisepsis, sometimes without credit to the method, have been advanced. Naturally, a clearing out of the intestines is of the same order of procedure as the evacuation of an abscess. Bile is claimed, certainly with some reason, as an intestinal antiseptic. Others, regarding the alimentary canal as a sewer, abandon all hopes of even measurably freeing it from bacteria. Still others unknowingly testify to the value of intestinal antisepsis by giving hydrochloric acid or small doses of calomel in enteric fever.

Among remedies most useful for intestinal antisepsis may be reckoned various insoluble substances: Naphtalin, betanaphtol, and various bismuth compounds. As long ago as 1887 I reported my observations with naphtalin in the treatment of some old army dysenteries. This, however, sometimes produced vesical irritation and other untoward symptoms. Betanaphtol was found to be too irritating to the stomach, so that although the reports of Bouchard were positive as to its antiseptic action its use was abandoned. Salol was effective in many instances, but its use presupposed sound kidneys, and in the presence of fever or too acid contents of the duodenum it was not decomposed into its constituents. The bismuth compounds were not irritant and their use has been crowned with success. Two have been especially studied, the naphtolate and tribromo-phenolate. In his experiments with the former Jasenski found that while the bismuth was almost completely excreted by the bowels, some of the naphtol was eliminated by the kidneys. In daily dosage of seventy-five to one hundred and twenty grains for an adult it is certainly not poisonous, and the quantity is quite sufficient to inhibit bacterial activity. The literature has been extensive and, in general, confirms my personal observations. As for the tribromo-phenolate the observations of Fasano are quite conclusive. After the administration of this remedy the amount of indican in the urine was markedly diminished, as was also the amount of putrefactive action in the intestines. After five days the feces of patients suffering from enteric fever gave no cultures of the bacilli of typhoid fever and bacterium coli. Intestinal tuberculosis, in some instances yielded to emulsions administered either by the mouth or rectum. Apparently in this substance, the tribromo-phenol is slowly liberated so that no poisonous symptoms are produced, although the daily amount may reach over one hundred grains. Some of it, at least, passes out through the urine, for Reynders has been able to detect tribromophenol twenty-four hours after the absorption of the drug.

During the past three years another bismuth preparation has attracted considerable attention. I refer to the tetraiodophenol phtalinate. The laboratory studies of Klebs, Kruse and Lieven made with the sodium salt furnish evidence of its antiseptic action. The consensus of opinion seems to be that it is harmless and yet efficient. The only untoward effect which has been observed was an iodine acne which promptly disappeared. Bacteriological experiments made with the sodium salt indicate that it is effective against various pathogenic bacteria, notably staphylococci, streptococci and the bacilli of enteric fever (streak cultures on agar Petri plates). This differs from the other bismuth compounds in that it is, according to Loeb, at once split up by the gastric juice into bismuth oxychloride and tetraiodophenolphtalinate in which the iodine is certainly important. The necessary dose is somewhat smaller, five grains, thrice daily, being sufficient.

(*c*) Remedies for internal administration which have been designed to act upon the bacilli of tuberculosis are too numerous to be mentioned. Creosote has generally been conceded to be useful in the treatment of pulmonary tuberculosis since 1833, when it was employed by Reichenbach, to the present time. The disadvan-

tages of even beechwood creosote are well known. The non-toxic and unirritating carbonate and perhaps other derivatives and guaiacol carbonate have thoroughly supplanted it. While I am sure that no one can claim that creosote is germicidal, as regards the bacilli of Koch, we are sure that it renders the soil upon which these flourish unsuitable for their growth; in other words, it inhibits their development. Twenty to sixty drops thrice daily in sherry or port seems to be efficient. As to its value in pneumonia we have the testimony of Thomson, Smith, Cassoute and Corgier. Guaiacol carbonate is certainly harmless if we place credence upon the laboratory study of Eschle. Of this four to seven grains four times daily are sufficient to yield good results. Quite recently a glycerol ether has been lauded by Butler, but of this I cannot speak from personal experience.

Quite lately I have undertaken the investigation of a terebene derived from the *Melaleuca*, which is probably a mixture of three products, eucalyptol, terpineol and possibly citrene. This is excreted by the lungs and since it is unirritating can be administered hypodermatically. It is quite too early to report results.

(*d*) Of all the remedies which are classed as urinary antiseptics, hexamethylen tetramine probably stands at the head. This substance, a condensation product of formaldehyde and ammonia, dates back to 1860 when it was made by Von Butlerow. Its use is to sterilize the urine by destroying micro-organisms which it does effectually and finds ample field for its employment in pyelitis, pyelo-nephritis and cystitis. Even large daily doses, to one hundred and fifty grains, are well borne, although these are entirely unnecessary. Nicolaier employs about eight grains, thrice daily. Formaldehyde is liberated in the urine and this, even in the smallest quantity, prevents the development of micro-organisms. Richardson finds that a constant result of its administration to patients suffering from enteric fever is the freeing of the urine of the bacilli of Eberth. A personal observation in regard to the bacillus of Koch is that the urine of a patient afflicted with tuberculous cystitis shows a much smaller number of bacilli during its administration, but a continuance of the medication is necessary.

I am aware that this subject has been presented in a fragmentary and incomplete manner. My purpose has been to point out what has been accomplished by many observers, and how far the answers to the questions propounded in this paper may be justified by the facts at our disposal.

Thirty years ago the foundations of surgical antisepsis were laid and the development upon these foundations brought about by Lister and countless followers has resulted in the ideal having been nearly attained. To-day one may consider that internal antisepsis rests on quite as secure a basis as did the surgical when the pioneers began their work, and the ensuing three decades will doubtless bring to fruition our most daring hopes. As the surgeon gives credit to Lister, so must we acknowledge our indebtedness to Bouchard for many of our facts, trusting that others will continue the work which he so painstakingly has begun. At this time, we can safely say that internal antisepsis is more than the dream of the theorist.

Internal antisepsis is possible, may be useless or detrimental under certain conditions, or may be absolutely contraindicated, because of the patient. How best to attain internal antisepsis is a question to which the answer will vary with each succeeding year as our knowledge of infectious diseases and the best means of combating them rest upon a broader and more secure foundation.

THE TREATMENT OF CONSUMPTION AT HOME.[1]

By JOSEPH EICHBERG, M.D.,
OF CINCINNATI, OHIO.

No single subject of general interest to the practitioner has been attracting so much attention recently as the topic chosen for the subject of this paper. The fact requires no explanation. The widespread prevalence and high mortality of pulmonary tuberculosis are so well known that statistical data of every kind would be superfluous. The ceaseless interest that has attached to the study of all questions connected with consumption, so-called, is evidence of the importance of the study to the physician and to the community. The enthusiast may devote his life to the elucidation of an idea or of a speculative problem. It is the practical question which enlists the patient, persevering effort of many workers.

It cannot be said that the treatment of consumption may be ranged in the category of questions that have nearly found solution. No one would think of classing it in this respect with diphtheria or malaria or syphilis, or even with diseases not yet amenable to treatment by specifics, such as rheumatism, pneumonia and typhoid. But the problem may be considered as approaching solution.

The promise thus held out to the consumptive and to his family does not come to them with the glamour of specific and prompt effects to be obtained from the use of secret nostrums or of semi-quack remedies. There is to be no wonderful change wrought after the fashion of the Arabian Nights' performances, where the good genius anoints the patient or injects him with his little syringe, and the unhappy sufferer emerges radiant in his new equipment of health. No "open sesame" shall instantly remove the bars of the sick-room; but honest, patient, intelligent endeavor shall aid the patient in his

[1] Read before the Ohio State Medical Society, Columbus, May 10, 1900.

battle against the malady that oppresses him and, in many instances, turn the scale in his favor.

It would almost seem that in this one feature —the treatment of pulmonary tuberculosis—the researches of science had not been an unmixed blessing; or, rather, that the light shed upon the subject of causation, preeminently by Cohnheim, Villemin and Koch, had served rather as a will-o'-the-wisp than a true beacon. Given a specific germ or bacillus as the cause of the disease, what more natural than that the next aim of all research should be a specific remedy, a parasiticide? The more recent advances in our knowledge of immunity, the discovery of the antitoxins of diphtheria, tetanus and of the bubonic plague, all tended but to stimulate the search for a similar remedy for the relief of a disease, whose annual mortality exceeds that of the most virulent and destructive of all epidemics.

Thus, it has come about that we have wandered afar from what seems to be, if not the true, at least the safest path; and now that we have followed the different marsh-lights, our feet return to the old road; we are somewhat wiser for our various errors, with some illusions gone, with our experience as a safeguard against too eager pursuit of every chance, but with courage undaunted by past failure and with earnest undiminished hope for further success.

It is not difficult to see why we have strayed. All therapeutists, in the pursuit of the *specific* idea, seem to have lost sight of the fact that pulmonary tuberculosis in the only forms which are amenable to treatment, that is to say, in its chronic forms, is always either a mixed infection or a process so limited in its distribution that natural safeguards will surround the tuberculous area with an investing capsule and thus make it harmless.

The term consumption is wonderfully well chosen. It characterizes, as perhaps no other single word could, the dread course of the malady and furnishes the reason for its fatal ending. It is the consumption of tissue, of strength and of resisting power, so far in excess of the power of repair, that leads to the "decline," another polite term for the same process. The suggestion comes almost spontaneously that a cure is only to be sought either by arresting the waste, or by so increasing the assimilation that the balance will remain on the credit side of the patient's ledger. It would appear that whatever agencies can increase the assimilation of nutritive material not only furnish substance to replace that which is lost, but that this very increase of constructive metamorphosis promotes directly that increase of resistance which stays the destructive agency. We not only get an amount of good money equal to the bad, but we prevent the bad money from being put into circulation; we not only put on a pound for the one that has been taken away, but the new pound thus formed causes the slower removal of the next pound; the patient thus being steadily strengthened for his battle.

The treatment of consumption may be properly classified as the specific, the climatic, and the dietetic and the hygienic. Some allusion has already been made to the specific treatment. The search for such has flooded medical literature at different times with the most curious suggestions. The remedies most prominently mentioned in recent years have been the various derivatives of the tubercle bacillus; the original tuberculin of Koch, his later tuberculin R.; the tuberculocidin of Klebs; the special forms of culture products the secret of which remains with their discoverers—and advertisers; the phosphorus combinations, under the supposition that the causal element was a deficiency of phosphorus; the hot-air inhalation treatment, the injection of cinnamic acid and the absurd treatment of Bergeron of inflating the bowel with sulphuretted hydrogen, were all dominated by the one idea of curing the disease by killing the poison that was its cause. The futility of such efforts, easily understood when the pathological substratum is taken into account, is now generally conceded by the majority of the profession. With regard to tuberculin, the acts are not yet closed, in spite of the clear unchallenged demonstration by Virchow that the introduction of this product into the circulation often occasioned a general dissemination of a previously localized process; and thus furnished the means of undoing what natural efforts, unaided, had accomplished for the arrest of the disease.

Creosote was also introduced, originally for its specific action. The idea that it possesses such power is no longer current—the tubercle bacillus is not likely to be reached by the remedy in any such concentration as could impair its vitality or retard its growth—yet creosote continues rightfully to hold an important place in the treatment, because in small doses it seems to promote digestion, to increase appetite and thus to favor those natural forces through which the return to health is made possible.

It is fair to presume that the search for specifics is not yet done nor likely to be given up. The prize is too great, the reward too tempting, whether considered from the broad side of humanity, or from that of material gain, but the philosophy of past experience would seem to show that the patient's safety does not lie in that direction.

The climatic treatment deserves more than a passing mention. It has proved its title by many victories; it has withstood the reproach of many failures. Without reference to the advantages or the disadvantages of any geographical zone or altitude, the great difficulty in its application is the limited number of patients, whose pecuniary circumstances will permit them to take advantage of it. With the wide prevalence of consumption, the great fraction of its victims must always come from the working classes, whom removal from home and a life of contin-

ued idleness are alike impossible. Even where pecuniary considerations do not enter into the question the victim will often prefer the certainty of speedy death to the possibility of recovery in exile, removed from home and kindred. The patient sent away for his health, with the necessity for completely severing all business and social ties, finds himself among strangers without any anchor. His heart, too, like that of Goldsmith's Traveler, "drags at each remove a length'ning chain." The very fact of his want of occupation makes him an easy prey for nostalgia, so intense that it may prove almost fatal. There can be no greater suffering, even in physical pain, than that occasioned by such attacks of homesickness. It is because their life's work may be resumed even in new abodes that physicians, who are forced to try a change of climate because of pulmonary disease, show more rapid and permanent improvement than patients from other callings. When the patient is fairly settled in his new quarters he whiles away his hours with others, who, like himself, have sought "some air, some weather, and some earth." He fortifies himself, in the language of Robert Louis Stevenson, with "tonic, bitter wine and perpetual beef tea" or "sooks awa' at codliver ile till it's a fair disgrace."

Let me not be misunderstood. I would not underestimate or speak lightly of the benefits of climatic treatment in this disease. Indeed, there are many cases in which it would be gladly undertaken, if patients could have anything like a fair assurance that the banishment would not be permanent; that, after a stay of a few months in the selected spot, they might return with a reasonable hope of a comfortable existence. I believe that it is the combination of climatic treatment with the succeeding home treatment that will often yield the best results. Many a patient will bring the sacrifice, of money and of sentiment, exacted by a removal from home and the cessation of business activity, if there is a fair promise that the benefits accruing will not be more than neutralized by his resumption of a life at home.

The great majority of our consumptives must remain where circumstances have placed them. For them, for the suffering poor, the third plan of treatment, the dietetic and hygienic treatment, holds out a ray of hope so promising that it requires only determined effort on the part of the profession to rob the dread disease of many of its terrors. The dietetic and hygienic treatment may be summed up as consisting of good air, good food, good rest and good cheer, and there should be an abundance of each.

Our opinions of the value of "good air" in the treatment of pulmonary consumption have undergone no change; it is merely a question as to what constitutes good air, and how it should be administered. The impression has been general that rarefaction was an essential feature of good air, and for some time it was held that an altitude of 6000 feet, or thereabouts, was indispensable. While not denying to the atmosphere at this altitude the advantage of purity sufficient to make it of special therapeutic virtue, it has been shown that much lower altitudes will answer quite well for consumptive patients. Thus, the famous sanatorium at Nordrach in the Black Forest is 1400 feet above the sea level, Ventnor on the Isle of Wight, and Bournemouth on the southern English coast are practically at the level of the sea. The results obtained by Detweiler at the Sanatorium of Falkenstein in the Taunus range are familiar to all. But the rapidly accumulating experience of the past few years, gained largely at the various sanatoria, has already established the fact that no air, even when seemingly most unfit, such as the atmosphere of the crowded city, is altogether objectionable, provided it be the air of outdoors. The warm, stuffy, oft-breathed and much contaminated air of the ordinary living-room, no matter how spacious the dimensions, is unfit for the tuberculous patient. It has just been said that some air is better than others; naturally the free, pure, quick-shifting air of the higher altitudes will fill the requirements better than the soot, dust and gas-laden atmosphere of the large city, yet the latter still contains all the ingredients sufficient for the patient, whose progress in this medium will be somewhat slower, but there will be progress.

It is particularly for the purpose of showing that this atmosphere forms a medium not wholly unfit for the lungs of the tuberculous patient that so much recent work in the direction of the home treatment for consumptives has been undertaken. The most noteworthy feature in the reports of recent studies is the uniformity of success under climatic conditions the most diverse. From large cities, such as Manchester, England, practically at the sea level, with considerable moisture, in inland and upland villages, in small sanatoria in England, Ireland, Scotland and Wales, in Germany and France, and in our own country, most encouraging accounts have been furnished. We may thus safely feel that we are not of necessity bound to any climate or altitude; we may take advantage of the more favorable conditions offered by these, when the circumstances of the patient, pecuniary and otherwise, permit; but we have no right to despair or give up the battle because the patient cannot be sent from home.

Granted that the patient shall receive the air fresh from outdoors, how much shall we give him? To begin with, about twenty-four hours' worth every day. The patient must live out of doors. In winter he does this by being warmly muffled up in fur and blankets, with hands and feet well covered and sitting or lying in the open air in the sunshine if possible; protected from the wind, if need be, by a small canvas screen. If there is rain or snow, a glass-encased veranda will supply the place of the solarium of the sanatorium; or a canvas cover to the veranda, leaving an opening for free access of air, will an-

swer very well. The patient rests out-of-doors and must therefore be well covered with clothing and wraps. In summer the shady spots in the open will naturally be sought. At night the windows of the bedroom are kept wide open, winter and summer. The excessive cold of the winter night may be tempered by a grate fire in the open hearth, but fresh air must enter freely from without. Dr. Millett of Brockton, Mass., in a recent report to the *Maryland Medical Journal*, has shown the courage of his convictions by having five of his patients sleep out-of-doors during five or six months respectively, from June to November. A platform was built at the height of the second floor; on this the patient's bed was placed; and here, except on rainy or stormy nights, he slept soundly and comfortably; never being the worse for the dews or even for light drizzling rains.

Where the patient can be induced to do this, there would seem to be sound reason for preferring the canopy of heaven to the restricted space of the bedroom, however free its ventilation. With firm persuasion on the part of the physician the first objection to such a change in the patient's way of living can usually be overcome, although the rank heresy that night air is harmless, flying, as it does, in the face of all established tradition, always causes a prompt objection. Later the patient's own judgment can be left to deal with the problem. So marked is the improvement, so decided the change, that the consumptive will soon complain of the oppressiveness of the air in any room with closed windows. When not in the open air, it should be made a rule that the temperature of the living room during the day should not exceed 65° F., and for five or ten minutes of each hour the windows should be left open, even in the most severe cold. Along with other fallacies we have swept away the bugbear of taking cold when a breath of fresh air enters the living room of the consumptive patient. The impure, hot air weakens and enervates; the cold, fresh air revives and exhilarates the patient. Fresh air in abundance comes first in the treatment, because fresh air means better appetite and better sleep, better oxidation, better nutrition.

Next to good air we place good food. Of this, too, there must be an abundance. It will be the physician's duty to crowd the food as he has crowded the air; and it will require more tact and persuasion. There is at times an actual aversion to all food; at others, a strong repugnance to those simple nutritive aliments that come under the head of the easily digested varieties. Meats and fats are special objects of dislike. Actual vomiting, sometimes caused by, again without, cough, may make alimentation difficult. We are however confronted with a simple self-evident proposition. The fire cannot be kept burning without fuel. Patience, firmness and sympathetic reasoning will generally carry the day. The doctor must stand his ground. He should use caution in stating his terms, but he dare not recede from his position or accept any compromise. Much of the ultimate success will depend on the patient's recognition of the necessity for obedience, of his willingness to execute literally the details of the treatment. The greater success of treatment in sanatoria doubtless depends on the influence of example in securing uniform adhesion to established rules. The older patients, those longer in the service, always carry along the new arrivals.

In private practice the task is more difficult, but not to be shirked on that account. Frequently the feeding must be forced at the outset and many dyspeptic symptoms, real or fancied, offer difficulties. The best plan would seem to be to disregard these entirely and continue the feeding. The appetite will grow with what it feeds upon. Three full meals daily should be required. If no gastric symptoms are present and the appetite returns, a sandwich or cracker may be taken between meals. The egg treatment, suggested by Dr. Ely of Rochester, would seem to have a place in the few cases when other foods cannot be taken. Raw eggs are given in steadily increasing number until as many as two dozen are consumed daily.

The effort of the physician is always directed to securing an amount of assimilation in excess of the waste of tissue. Any craving for plain, wholesome, easily digested foods, or for fruits should be indulged; and, contrary to the plan for healthy individuals, the patient should be steadily encouraged to eat more than he wants. Cream and butter should be introduced into as many dishes as possible. Buttermilk and koumyss make acceptable beverages, particularly where fever is present. Albumen water, flavored with lemon, orange or pineapple juice may be substituted for the raw eggs. Concentrated soups, thickened with rice, barley, farina or sago, having an egg or two stirred through each cup, should be taken daily.

Finely scraped raw beef, served with salt and pepper, or covered with a layer of grated chocolate, will be taken when cooked meats are objected to. Game of all kinds may be allowed. Of questionable propriety is the use of pastries, sweets or stimulants, including under stimulants coffee, tea and alcohol. As a general practice they should be omitted from the dietary. The object always is to crowd the nourishment, keeping watch over the digestion, so as not to cause the patient to rebel. The more promptly he grows accustomed to the outdoor life, the better the appetite, and the greater the power of assimilation.

The third feature is good rest. Exercise means tissue waste. The thrifty man of business so arranges his affairs that the income shall more than meet expenses and his constant effort is to curtail the expenses. The poor consumptive has a hard time of it, trying to maintain a balance between income and expense account of his nutrition. He, too, must curtail expenses

where possible and the readiest method is to avoid every effort. He must rest, in the day on a reclining chair or couch in the open air, at night in his bed.

It has been thought a wise plan, particularly at high altitudes, to urge exercise in the open air; camp-life, good enough in itself, but likely to be attended with many needless hardships, not necessarily severe, but always excessive for the sick man; cow-boy life on a ranch; mountain climbing, etc., etc. All of these have their advantages, when the sick man is no longer sick, but while he is sick he must rest, absolutely, continuously and cheerfully. The rule in the Nordrach Sanatorium is that the temperature shall be taken four times daily and the patient gets no exercise until there is no fever. Absolute rest means mental rest as well as physical; this rule is so strictly enforced at Nordrach that patients go to no entertainments, receive no visits, and have their telegrams and letters passed upon by the director; so that no unwelcome, disturbing or exciting news may reach them. This is perhaps an extreme position, but we play for a high stake in this game and every factor counts. The family as well as the patient must be advised and cautioned to eliminate all sources of excitement and worry. The patient should be allowed to sleep as much as he chooses, being awakened only for meals. The excellent results obtained by Trudeau at the Saranac Sanatorium are due in no little degree to the recognition of the importance of absolute rest in connection with other features of the treatment. With a perfectly normal temperature the patient may take a short walk, the thermometer being used after the exercise. If there be return of fever, the walk is either not repeated or greatly shortened. If the temperature remains normal, exercise may be made a part of the daily program, always being controlled by frequent use of the thermometer. The patient cannot rest too much in the early part of the treatment.

Our fourth factor is good cheer. The moral influences surrounding the patient are all important. The text-books dwell upon the familiar "spes phthisica," the pathetic hopefulness of the consumptive, contrasting so sadly with the evident approach of death, of which he alone remains unconscious. It is a frequent occurrence, but the opposite mental attitude, that of resigned indifference, is not less common. Many victims discuss their condition with a certain uncomplaining hopelessness, the conviction of the fatalist, that what must be, must be, and so any positive effort to improve the condition is useless. "Kismet."

The sick man requires constant encouragement from physician and friends. There should be no manifestations of sympathy, but all conversation should be based on the premise of final recovery. The hope of achieving such result must be held out as an incentive to rigid adhesion to the prescribed rules. It is here that the physician meets with grave obstacles. The patient may be ever so willing and conscientious, the design is thwarted by interference of well-meaning, but misguided friends and relatives. The physician must have faith in his own advice, for there can be no works without faith, and he must be able to impress his earnestness upon the patient and his immediate surroundings. Here again the sanatorium has a great advantage of controlling the surroundings of the patient. The beginning of the treatment is the most difficult; once started in the proper direction, the patient improves so manifestly that the task becomes easy. It should be explained to the patient that indulgence in petulance or fits of anger is a serious drawback and delays recovery; and to the family that a little care and thoughtfulness on their part will avoid needless friction.

But what of medicines? Medicines from the shop really do not enter as a necessary part into this plan of treatment. Many cases have so far recovered as to be able to resume work without any medicine. It may serve a certain purpose to give some simple tonic. Creosote in small doses or the bitter tonics can thus be employed. For the night-sweats, a pill of agaricin, gr. 1/6, and atropine, gr. 1/96, may be given at bedtime. A sponge bath of vinegar and water, mixed in equal parts, given at bedtime may control the night-sweats without special medication. If cough or pain be very severe the new derivatives of morphine, dionin, gr. 1/6-1/3, or heroin, gr. 1/12-1/24, will be found very serviceable. Diarrhea, if not dependent upon tubercular ulceration of the intestines, may be checked by the use of bensozol and codeine, or by opium and its derivatives. Many of these annoying symptoms will soon disappear under the general régime without medication; or, if remedies are necessary at the outset, the medicine may soon be discontinued.

The patient, whether married or single, should occupy his or her own bedroom. Sputum should be received in a vessel containing disinfectant solution of some kind and should be emptied into the drains, if in a large city, or preferably burnt. Underclothing worn during the day should be changed at night. The bowels should be evacuated daily. The patient can easily be instructed to keep his own temperature chart. Where practicable, the weight should be taken every two weeks. It is wonderfully encouraging to the patient to note the decline in temperature and the gain in weight. For obvious reasons the tuberculous patient should not marry, a caution which, especially for female patients, is not as superfluous as it may seem. Pregnancy, with its demands on the mother's nutrition, is a most unfortunate complication; it often renders the condition hopeless for the mother. The child is generally carried to term, but the mother does not rally from the puerperal period and her decline is then very rapid.

What cases are especially suitable for this home treatment? All cases are suitable, even the most desperate. In Nordrach no case is re-

fused because of the advanced stage of the process, and all are treated by the same method. Naturally the best results may be anticipated when the disease is recognized in its incipiency; so that destructive changes over large areas may be prevented; but no case short of being actually moribund need be denied a trial of the method. One case of my own, a young man of twenty-two, whose unusual mechanical talent and great industry made him foreman of a large machine-shop before his twenty-first year, had an attack of pleurisy a year ago, tuberculous pleurisy, doubtless, which left the right lung compressed into the apex of the chest-cavity. At Christmas he had repeated hemorrhages for two weeks. I saw him for the first time early in January. The air-containing space of the right lung was now converted into a cavity, and there was some infiltration at the apex of the left upper lobe. He was coughing constantly, so that he could not sleep; the cough induced vomiting; his night-sweats were very profuse and his temperature was constantly above normal. His home is on one of the hillsides overlooking the valley in which our city lies. Three weeks of open-air treatment wrought a wonderful change; he slept through the entire night; the expectoration which, at the first test, contained bacilli in great abundance, was now reduced to less than half the former quantity; night-sweats had ceased; the fever amounted only to a slight evening elevation; vomiting no longer occurred, the appetite had returned and there was a manifest improvement in strength, color and spirits.[1]

It is upon the general improvement, rather than upon disappearance of bacilli from the sputum, that reliance is mainly to be placed. Experience has shown that tuberculous areas are not destroyed under this plan, though it would seem to favor that process of fibrous inclusion by which extension of the morbid process is arrested; thus following the method of spontaneous cure which Nature, as autopsies prove, accomplishes unaided in many instances. In some cases patients, so far restored as to be able to resume work, have continued to expectorate tubercle bacilli.

There is no worthier cause to which the profession can earnestly devote itself than the care of patients suffering from this disease; there is none in which the results are likely to yield more encouragement to the patient and inmost satisfaction to the physician. Recovery cannot be expected in every case; but it is fair to speak of recovery where the wage-earning capacity of the sufferer is restored, and improvement to this degree may be confidently expected in a number of cases hitherto regarded as condemned without hope.

1105 McMillan Street.

[1] Four months have passed since the above was written. The young man is now making models for machinery in a small laboratory in his own home. He climbs the surrounding hills without effort or dyspnea and has gained twenty pounds in weight. No air enters the right lung. The infiltration at the apex has disappeared.

IRITIS.[1]

BY J. H. McCASSY, M.A., M.D.,
OF DAYTON, OHIO.

THE iris is the colored membrane which separates the lens and its capsule from the cornea. It floats in the aqueous humor and divides the aqueous chamber into two parts. The anterior chamber is the larger of the two. These two spaces communicate through the pupil. The iris is the only muscular organ that is constantly immersed in liquid.

A more or less constant relation exists between the pigmentation of the cutaneous structures and that of the iris. Blondes will have light and brunettes dark colored irides. To this rule numerous and important exceptions occur. Blue and gray are the predominating colors in the irides of the inhabitants of northern countries. Brown comes next in frequency and this is the prevailing color found in tropical and semitropical countries. Brown being a dense pigment it more nearly excludes the brilliant light found in southern lands. Perfectly black irides are never found. With few exceptions the color of the iris in new-born children is of a light grayish-blue. The stromal pigment, which is the final fixed color of the iris, is not developed until after the third month. Mothers anxiously watch these changes. If the color of the irides of the parents differ, Nature occasionally tries to please both by blending the colors.

In many cases the pigment may not be evenly distributed in the same eye, and unless this fact is known the densely pigmented patch may be mistaken for an old iritic patch. We also find a difference in the color of the two irides; one may be brown, the other blue or gray. It is said that in cases of chromatic asymmetry there is great liability to cataract in the lighter colored eye. Where both irides are known to be of the same color prior to a painful disease of the eye, and upon inspection in after years it is found that in one eye the iris is blue or gray while the other is greenish or brown, this will be evidence of an old iritis or cyclitis. A blue or gray iris appears greenish in iritis while a brown iris appears muddy.

The pupil, the circular opening in the iris, should measure about 4.14 mm. or one-fifth of an inch in diameter. The size of the pupil is influenced by many conditions. It is smaller in old age, in blue eyes, and in hypermetropes; larger in youth, in dark eyes, and in myopes. Contrary to the current notion, the pupil is not in the center of the iris, but a little to the nasal side. The pupil, or rather the pupillary margin of the iris, should be freely mobile. If it is not, it may be attached anteriorly to the cornea or posteriorly to the lens capsule. These attachments are designated anterior and posterior synechiæ respectively.

[1] Read before the Montgomery County Medical Society, May 4, 1900.

Causation.—Iritis furnishes from 3 to 4 per cent. of all ophthalmic cases. When allowed to run its course it is one of the most fatal diseases to sight. In this disease above all others prompt medication has its highest achievements. Medication here is equivalent to a prompt, brilliant surgical operation. Iritis is most amenable to prompt treatment. It occurs most frequently between the twentieth and fortieth year. It is not very frequent during the first fifteen years of life and during old age. It affects men more frequently than women. Syphilis is responsible for 60 per cent. of cases. Rheumatism (articular) causes 10 to 20 per cent. of cases, the remainder being due to various causes such as injury, gonorrhea, gout, diabetes, malaria, etc.

Varieties. — (1) Plastic; (2) serous; (3) parenchymatous. Plastic iritis is by far the most frequent variety met with and is characterized by pericorneal congestion of a grade in proportion to the severity of the disease. As seen by oblique illumination, there is an exudate of organized lymph on the surfaces of the iris. This is very prone to form adhesions. The aqueous humor is not greatly clouded, and the cornea is not spotted. The pain is more intense in this than in the other varieties. The pupil is sluggish and contracted and stubbornly resists the action of mydriatics.

In the second variety the exudate instead of being plastic is serous in character and contains solid elements which usually become deposited in spots on the posterior surface of the cornea. The aqueous is very murky and cloudy. The pupil is not contracted but may be slightly dilated. The tension is often increased, due perhaps to the increased secretion of the aqueous humor or blocking of the entrance to the canal of Schlemm with exudate. As a rule hypopyon is absent. Opacities in the vitreous body are very common. Serous iritis is prone to glaucoma and here atropine should be used with great caution. Paracentesis of the cornea may be repeated to keep down high tension or an iridectomy may be made to avert glaucoma.

In parenchymatous iritis or suppurative iritis, the inflammation attacks the tissue of the iris and instead of the exudate being on the surface of the iris, it is found within. This gives to the iris its characteristic swollen and nodular appearance. The surface appears spongy. This exudate may be extensive. It may suppurate and fall to the bottom of the aqueous chamber in a thick mass known by the name of hypopyon. The hypopyon may undergo absorption in a few hours or in a few days.

Symptoms.—Pain, not so much in the eyeball as in the brow, temple and cheek. Photophobia, lachrymation, pericorneal redness, impaired mobility of the iris, exudation of inflammatory products, and disturbance of sight. These symptoms are common to all forms and types of iritis, and it is not so important to know which form of iritis you have to deal with as it is to be sure you have iritis and not conjunctivitis or glaucoma.

Diagnosis.—Iritis is so intimately associated with cylitis and the treatment practically the same, that it is not necessary at this time to differentiate one from the other. Iritis may be mistaken for conjunctivitis or acute glaucoma. To treat an iritis for conjunctivitis, delaying the use of atropine, the sheet anchor in the former, is a disastrous mistake, but as lamentable as this may be it is still worse to treat acute glaucoma for iritis. The treatment for iritis is most emphatically contraindicated in any form of glaucoma.

In iritis there is found: Hyperemia of the iris; aqueous murky and turbid; iris thick and swollen; pupil contracted and immobile; pain on exposure to light; synechiæ posterior (adhesions); tenderness on pressure; sclerocorneal rosy zone; punctate spots on the cornea; occasional edema and ptosis of upper eyelid; tension slightly increased; hypopyon occasionally; no conjunctival secretion; free lachrymation; vision affected; severe pain in the brow and temple, intermittent or neuralgic in character.

In conjunctivitis there is found: Iris has natural appearance; aqueous clear; no swelling of the iris; movements of the iris free; no dread of light; no exudate nor adhesions; very slight tenderness; uniform conjunctival redness; cornea clear; moderate edema; no increase of tension; never hypopyon; abundant secretion gluing lids together; copious lachrymation mixed with pus or muco-pus; vision unaffected; sandy scratchy sensation in the eye continuously.

It is always difficult to diagnose glaucoma in the early stages. The diagnosis hinges on the tension of the eyeball, and this is always difficult to determine. In acute primary glaucoma (inflammatory), as in iritis, there is pain, photophobia, lachrymation, redness of the sclera and redness of the lids and disturbance of vision. The pupil reacts sluggishly and the iris is discolored. To determine the presence of glaucoma one has to depend on the dilated pupil, severe pain in glaucoma and high tension. Later on the ophthalmoscope will reveal abnormal cupping or excavation of the optic nerve which usually begins on the nasal side.

In order to distinguish rheumatic from syphilitic iritis the following points will be noted. In rheumatic iritis the following symptoms are present: History of articular rheumatism; pain, photophobia, and lachrymation marked; condylomata never observed; exudative changes slight; posterior synechiæ long, thin and non-pigmented; iris often strikingly bright; no pigment spots on anterior lens capsule; not associated with choriodoretinitis; generally perfect recovery of sight; great tendency to relapse; whereas in syphilitic iritis the symptoms are as follows: History of acquired syphilis; pain, photophobia and lachrymation not equally well marked; condylomata present in nearly all cases; extensive

exudative changes; posterior synechiæ short and deeply pigmented; iris often dull and muddy; abundant pigment in anterior lens capsule; choriodoretinitis and blurring of optical disk; sight often impaired; much less tendency to relapse.

Duration.—Iritis or cyclitis may be acute, subacute or chronic. Acute iritis speedily reaches its height and in rare cases runs its course in one week, but the usual duration of acute cases is four to eight weeks, while chronic cases last for months.

Pathological Anatomy.—In diseases of the blood-vessels, due to infection, particularly syphilis, there is a plastic exudation thrown out together with a cellular hypertrophy of the tunica media. This means loss of elasticity and contractility. This new material thrown out is a low grade of tissue, weak in its powers of resistance, and is a favorable site for disease. Where seclusion of the pupil has occurred, atrophy of the iris will take place along the pupillary margin. If the entire posterior surface is adherent, and remains so, sooner or later atrophy of the whole iris will take place. When the undilated iris becomes permanently adherent to the lens capsule around its entire pupillary margin, we have a condition known as seclusion of the pupil. This leads to glaucoma and destruction of the eye, because there is no longer any communication from the anterior to the posterior aqueous chamber.

Occlusion of the pupil differs from seclusion of the pupil in that the communication between the two chambers is not cut off, but the pupil is closed by a diaphragm or membrane formed from the exudate thrown into the pupil. Occasionally, during an attack of iritis the tissues of the eyeball are put upon the stretch and the eyeball becomes elongated or the inflammation may cause spasm of the ciliary muscle. The lens may become thicker or advance. These conditions will change a far-sighted eye to a near-sighted one, but when the iritis passes away, the eye generally returns to its former state of refraction.

Prognosis.—If the pupillary attachments refuse to be broken up, no matter how successful the constitutional medication may be, the future of that eye will be uncertain. Such an eye cannot stand strain and exposure. It is weakened and liable to recurrent iritis and sympathetic ophthalmia. If free dilation of the pupil can be secured and the injury has not been too great, the prognosis is favorable.

Treatment.—Atropine is the sheet-anchor in iritis. It is the great anodyne. It paralyzes the sphincter muscle and puts at rest the mobility of the pupil, breaks up adhesions and puts the pupil back out of the way. Adhesions are not so likely to occur when the pupil is widely dilated. A solution of sulphate of atropine, four grains to the ounce, instilled every hour or two for eight to twelve hours if necessary until the pupil is fully dilated. Then one drop every four hours will usually be sufficient. If poisonous symptoms appear atropine must be stopped for a few days. A calomel purge followed by a saline acts like a charm in iritis. This, with hot baths, lowers the tension of the eyeball.

An inflamed and watery eye with impeded circulation does not present a good surface for absorption, but the application to the eyelids and brow of hot, wet cotton or towels changed every minute will promote circulation, increase absorption of the atropine or other mydriatic, and relieve pain. Smoked glasses screen the eyes from the harsh rays of light and afford more suitable protection than bandaging. If a broken or swollen lens is the cause of the iritis it should be removed; three or four leeches applied to the temple, forehead and side of the nose are very beneficial. The artificial leech may be used, but it has been unsatisfactory in many hands. Morphine, Dover's powder or aconite may be used to combat pain. Both eyes should be allowed to rest. There is no such thing as resting one eye by closing or bandaging it while the other is at work. The too early use of the eyes will cause relapses. For syphilitic iritis, mercury is the remedy. This should be followed by iodide of potassium. The salicylate of sodium and the alkaline carbonates are the mainstay in rheumatic iritis.

Surgical Treatment.—Paracentesis is indicated when the tension of the eyeball is persistently and notably raised; also in large hypopyon or dotted spots upon the back of the cornea, or, when the inflammation refuses to yield to milder means. In seclusion or occlusion of the pupil an iridectomy should be performed as soon as the disease becomes quiescent.

CLINICAL MEMORANDUM.

MERALGIA PARESTHETICA.

By JAMES J. WALSH, PH.D., M.D.,
OF NEW YORK;
INSTRUCTOR IN CLINICAL MEDICINE IN THE NEW YORK POLYCLINIC HOSPITAL AND SCHOOL FOR GRADUATES IN MEDICINE.

ALTOGETHER about a hundred cases of meralgia paresthetica have been reported by various observers. Drs. Musser and Sailer recently collected from literature some eighty-nine cases of the disease to which they added ten of their own.[1] It is only six years ago that the first case of the disease was reported. Bernhardt, who reported the case, had observed the condition some years before in another patient, but did not consider it of sufficient importance to deserve special mention. Other observers, including Musser and Sailer in this country, had observed cases of the affection before Bernhardt called attention to its independent character. A few months after Bernhardt's article Roth published reports

of fifteen cases of the disease. It is interesting to note that of the hundred cases reported about ten per cent. occurred in physicians. There is every probability that the affection is much more common than it might be thought to be from the recency of its introduction to medical literature as a distinct nosological entity. Notwithstanding this there are excellent observers who have been very carefully on the lookout for cases in recent years, yet have seen none. It seems worth the while therefore to report a case that has recently been under observation in Professor Katzenbach's clinic at the New York Polyclinic and which seems to respond very well to the definition of meralgia paresthetica given by Musser and Sailer, *vis.*: "A disturbance of sensation on the external surface of the thigh characterized by various forms of paresthesia accompanied by dissociation and more or less diminution of sensation."

It was in 1895 that Bernhardt[2] described a series of cases all of which were distinguished by the presence of a disturbance of sensation in a smaller or larger area on the outer side of the thigh. Bernhardt is an extremely acute observer. His work in recent years on peripheral nervous diseases has led him to the discovery of a number of symptom-complexes the independent character of which was not realized before. For these he has usually been satisfied to describe the symptoms and point out their coincidence in a series of cases, leaving the naming of the affection to others. The names selected have in at least one other instance besides our present subject been striking. It was Bernhardt[3] who first described the peculiar ache which occurs in the muscles attached to the external condyle as the result of strain or overexertion. The condition is noted in neurotic people who carry a heavy umbrella for a long period or make some other unusual exertion involving these muscles. To this symptom-complex French neurologists gave the name epicondylalgia. The baptism of the sensory symptom-complex on the outside of the thigh was left to a Russian. Roth of Moscow describes fifteen cases of the affection and gave it the impressive name meralgia paresthetica. From the high-sounding title one might be led to expect much of the disease. It really consists of nothing but a painful patch of skin on the outer part of the thigh. It is usually mistaken for rheumatism and our case has been treated as such for a long while. As there is no treatment known that accomplishes any real good in the affection no harm is done in treating it as rheumatism. It might as well be treated by rheumatic remedies as anything else.

The patient was a Polish Jew, about forty-five years of age, who complained of painful, at times hot, feelings on the outer part of his right thigh. Examination showed that besides these subjective symptoms there were certain objective symptoms. An oval patch of the cutaneous surface, about five inches long by about three inches wide, was almost anesthetic when pricked with a pin point. The area of anesthesia was not abruptly defined, but shaded off gradually into the surrounding normally sensitive tissue. In a corresponding area on the left leg there was a patch of slight hyperesthesia. No complaint of pain was made as to this left lateral region and the patient knew nothing of the existence of any symptoms on what he considered his well side until they were demonstrated during the examination. There was some dissociation of sensibility over the area complained of as painful. The man was a cabinet-maker and had to be on his feet most of the day. He used a plane a good deal and his right thigh was constantly rubbed during his work against the side of the work-bench on which the planing was done. It always gave him ease to sit down and his pain completely disappeared on lying down. More discomfort was felt just before a rain-storm than at other times. As soon as rain actually began to fall, however, the discomfort became less marked.

The patient was a neurotic individual with a tendency to neurasthenic symptoms and to general exaggeration of any pains and aches that he had. His knee-jerks were slightly exaggerated. He was inclined to constipation and had evidently suffered for some time from a certain amount of gastrointestinal disturbance. He had been recommended to apply iodine externally and to rub the affected area with chloroform-liniment. Both of these remedies made the condition worse instead of better. He had been treated with the ordinary rheumatic remedies, the salicylates, for a long time, but without relief. The administration of a stimulant nervous tonic seemed to do him some good. Rubbing with simple soap-liniment apparently gave him more relief than any other remedy that had been employed. Perhaps because of this, or because the coming of milder weather brought relief, he passed from observation early in the spring.

It was difficult to find out just when the affection began. When the patient first came under observation in January it had existed for several years, always being worse in the winter time. There was no history of alcoholism in the case, specific infection was denied and there was no good reason to doubt the denial. There was no history of any direct trauma. This part of his leg was, as has been said, continually pressed against the planing-table and this perhaps had something to do with the development of the painful condition. The corresponding patch of hyperesthesia on the other thigh seemed to indicate that another area of paresthetic meralgia was already in process of development on that side.

In most of the reported cases the affection had been symmetrical. For the area of disturbed sensation on the left thigh there was no special feature of his daily occupation that might be considered as an etiological factor. It is probable that the case was one of true meralgia par-

esthetica due, as are most of the other cases of the affection in medical literature, to a neurosis, that is, to a functional disorder of a localized part of the central nervous system. As is pointed out in the article by Musser and Sailer, the affection resembles an occupation neurosis more than anything else. It is true none of the ordinary occupation neuroses are limited to the distribution of a single nerve, as is the case in meralgia paresthetica. It would seem, however, that the true explanation of the affection will come with advance in our knowledge of the neurotic manifestations due to various occupations which have attracted so much attention of late years.

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MEDICAL PROGRESS.

The Liver and Nephritis.—Digestion, nutrition and elimination constitute the normal metabolic processes of the human organism and in the maintenance of these natural functions of animal life the liver plays a most essential part. It is the most important organ of digestion, says G. E. Davis (*Med. Rec.*, September 15, 1900) not only on account of its biliary function in preparing fats for absorption and digestion, but also because of the secondary digestion and elaboration of food products which fall on the liver after these materials have been absorbed into the portal system. It may also be considered the most important eliminative organ in the body, not simply through the bile excretion, but on account of its capacity of transforming the products of disintegration and completing the retrograde changes from non-diffusible colloids into crystalloid diffusible materials before they pass to the kidneys for final excretion. Many investigations have proven the intimate relation between the liver and kidneys. Urea is formed by the liver and returned to the blood to be excreted by the kidneys, and hence an analysis of urine is a good test of the hepatic activity. Renal insufficiency, therefore, proclaims preceding hepatic insufficiency—disturbed nutrition and autointoxication intervening. The kidneys first suffer functional disturbance because the imperfect products are brought to them in a form chemically unable to pass through them, organic change supervening as a result of long-continued irritation occasioned by these incompleted products of metabolism. The indications for treatment, then, in derangements of the kidneys are to aid digestion and nutrition and promote disintegration. Regulation of diet and fresh air are important. Then come the cholagogues and alteratives and often the best diuretic is the drug which arouses the hepatic functions.

Erosions of the Stomach.—The distinction between ulcer and erosion of the stomach mucous membrane was first made by Dr. Einhorn only a few years ago, and even now the differential and diagnostic points of the two considerations are appreciated only by a few. E. Quintard (*Med. Rec.*, September 15, 1900) has reviewed the literature on the subject, showing how the two classes of cases have been confused. By an erosion he means a superficial solution of continuity in the gastric mucous membrane, never extending so deep as the submucosa and the edges of which never present the indurated margins of the peptic or round ulcer. This does not mean necessarily, however, that there are two different processes pathologically. There was loss of flesh, the pain after eating was not very intense, there was considerable exhaustion after exertion, a pinched and haggard look at times, and, finally, that which made the diagnosis positive, the repeated findings in the wash-water of little pieces of gastric mucosa. As far as treatment is concerned, it would seem that excellent results are to be had from the use of a silver nitrate solution, 1-500, sprayed into the stomach by means of an Einhorn atomizer when the stomach is in a fasting condition. After two or three such applications at intervals of two days, the fragments usually cease to appear and the subjective symptoms clear up with a general improvement in the patient. Einhorn has recently used five grains of suprarenal extract for powdering the stomach in these cases with good results. The conclusions are that there are patients who give a peculiar and definite clinical history distinct from that of round ulcer, in whose stomach-washings are repeatedly found small fragments of mucous membrane, varying from 2 to 7 cm. long. They form a distinct class clinically and should be treated as such, but they occur under varying pathological conditions and, hence, the functional signs vary accordingly. As far as the presence of hydrochloric acid is concerned, it may be increased, normal, or much diminished.

Tuberculosis in Infant of Fifty-Six Days.—Any new report of a case of tuberculosis in very early life is always sure to incite new interest in the subject of hereditary transmission of the disease. The infrequency of the disease is well shown by the figures given by J. Comby (*Archives de Médecine des Enfants*, September, 1900) who adds another case to the list. Among 118 autopsied infants from birth to three months of age only one case of tuberculosis was observed, less than 1 per cent.; on the other hand this percentage rapidly increases with the increase in age. The case reported by the writer was that of a male infant, admitted to the Hôpital des Enfants-Malades in Paris, one month old. The mother was tuberculous, the father apparently robust. The child had been nursed by the mother for three weeks, then given boiled cow's milk. When admitted to the hospital the patient was suffer-

ing from gastroenteritis which persisted until death. The autopsy findings showed tuberculosis of the spleen, with advanced tuberculous lesions in the lungs. Comby expresses the belief that this is an example of inhalation tuberculosis in infancy; he sees no evidences of a congenital origin of the disease.

New Technic for Staining Tubercle Bacillus.—Such a variety of staining methods for the bacillus of tuberculosis is in vogue that the selection of any method necessarily depends largely on questions of certainty, adaptation, and preference. In a recent paper Dr. Randle C. Rosenberger (*Journal of Applied Microscopy*, June, 1900) has discussed several of these stains in the light of his own experience. The almost universally employed carbol fuchsin stain, as recommended by Ziehl and Neelsen, is one of the best methods. The method brought forward by Marion Dorset, who claims to have obtained a very good result when spreads were first stained with an alcoholic solution of Sudan III and then decolorized with dilute alcohol, 70 per cent., has been found to be most uncertain, because of the different makes of the stain. Anilin gentian violet is another very good stain, and when a specimen is stained with it, then decolorized with a twenty-five-per-cent. solution of H_2SO_4 and counterstained with vesuvin, a very good picture is obtained. The author believes that most people make the spread entirely too thin; he advocates having a good layer of the material to stain. The method practically recommended is one devised by Rosenberger and used by him for some time with gratifying and reliable results. The essential feature of his method consists in the substitution of sweet spirits of niter as the bleaching agent instead of the sulphuric or nitric acids habitually used. Further, the writer has combined the sweet spirits of niter and methylene blue with malachite green, Bismarck brown, and gentian violet. In this method the preparation is first stained with carbol fuchsin for five or ten minutes; then the mixture is placed upon the spread, after washing off excess of carbol fuchsin for one or two minutes and washed with water. If a green or blue color is not present, place the solution on again and wash with water. In specimens of urine where so much granular debris is present, and in some specimens of old sputum, this method is particularly applicable. The reason is that the niter dissolves out all fatty, granular particles and leaves a clean cut, well-defined field behind. The smegma bacillus is also decolorized with this stain. Where the sweet spirits of niter and the malachite green mixture is used, a beautiful contrast stain is obtained, green being the complementary color of red. In making up the mixture enough of the stain, malachite green or methylene blue in fifty-per-cent. dilute or saturated alcoholic solution is added to the niter to make a deep-green or blue fluid; the same with Bismarck brown. Tubercle bacilli in tissues may be stained by this method, a longer application of the counterstain (five minutes) being needed, however. The specimen is then washed in water, *nearly* dried, and placed in carbol xylol to clear, and finally mounted in xylol balsam. The bacilli are stained red, the tissue a brown, blue, or green, according to the stain used. The advantages claimed for this method are (1) that it is easy to prepare; (2) that it gives a clearer, better defined field; (3) that it does not destroy the tissue, as is sometimes the case with H_2SO_4; (4) that it acts more quickly and surely; (5) that it keeps indefinitely.

Pneumonia Following Laparotomy.—G. Kelling (*Münch. med. Woch.*, August 21, 1900) has often seen pneumonia after abdominal operations, especially those on the stomach, and classifies its etiology as follows: (1) By aspiration during narcosis. (2) By embolism from the ligated vessels, the emboli reaching the lungs through the anastomosis between the gastric and esophageal vessels. (3) By hypostasis. (4) As a result of an epidemic. The prevention will depend on the cause. Where congestion of the dependent portions of the lung is feared the bandage should be applied so that breathing is interfered with as little as possible, the patient should be allowed to sit up after twenty-four hours and exercises his lungs, and digitalis should be given. As far as the embolic form is concerned it is necessary to prevent as much as possible the mechanical aspiration of air into the peritoneal cavity during the respiratory movements and have the air itself pure and free from germs. Since the author has become cognizant of these facts he has built a new operating-room, with improved ventilation, with the gratifying result of not a single pneumonia in twenty abdominal operations.

Pulmonary Tuberculosis and Injection of Nitrogen.—The idea of injecting some gas into the pleural cavity was suggested as a result of the improvement which was observed in other tuberculous lesions when complete rest had been enforced for some time, and furthermore the well marked amelioration of symptoms which had been noticed in several cases following the accidental formation of a pneumothorax was most suggestive and significant. Dr. Murphy of Chicago was the first to urge this method upon the profession of this country and only a few have made any extended experiments to prove its efficacy. H. P. Loomis (*Med. Rec.*, September 29, 1900) reports the results of this form of treatment which he has tried upon eighteen selected cases during the past two years. It is necessary to make sure that the nitrogen is pure and a special apparatus as recommended by Dr. Murphy is most advisable. The gas is usually injected in the eighth interspace unless the lesion is in the lower lobe, when it should be injected in the third or fourth space anteriorly. When many adhesions are present several trials may be necessary or injection may be entirely impos-

sible. One hundred or more cubic inches of gas are usually employed and this amount generally causes a disappearance of all respiratory sounds and considerable displacement of the heart. Permanent beneficial results necessitate that the lungs be kept quiescent for from three to six months, two or three injections usually being sufficient for this period. A constant effect noted after the operation is that there will be a marked increase in the expectoration during the first twenty-four hours, but after a few days this rapidly diminishes. The gain in weight is very constant and even astonishing in amount. Nearly all subjective symptoms are markedly improved but the physical signs do not seem to be much altered. Several cases of persistently recurring hemoptyses were entirely stopped by injections and the author is thoroughly convinced of the efficacy of this method in early cases, with distressing hemorrhages. The best results can be expected from cases of apical unilobar tuberculosis without adhesions, in which the most compression can be obtained. Even the advanced and apparently hopeless cases can, however, be relieved of many of their distressing symptoms, unless the number of adhesions prevents the collapse of the lung. A more extended use of this method is strongly advised, for no bad results or even unpleasant effects have yet been detected. An apparent complete arrest of the disease has been noted in two cases and nearly all have shown decided constitutional improvement. A marked gain in weight has been seen in every case, even in those where the patient had previously been rapidly losing. It is believed that this method of treatment will have a permanent place in the amelioration of the symptoms of pulmonary tuberculosis and it is to be hoped that it will be given a more extended use in order that the kind of cases to which it may be best applied can be ascertained.

Therapy of Iodipin.—According to B. Sessous (*Münch. med. Woch.*, August 21, 1900) there are three convenient methods of giving iodipin. It can be given by mouth in the form of a preparation containing 10 per cent. iodine which allows the detection of iodine in the saliva after as short a period as 10 to 15 minutes; it may be injected subcutaneously, when its action is less rapid although more persistent and finally inunctions may be given, with however less satisfactory results. Iodipin finds its greatest field of usefulness in those forms of tertiary syphilis where the iodides, on account of gastric or other disturbance, are contraindicated. There is as yet a great diversity of opinion as to the size of the proper dose, some advising small, others large doses, but even the largest that it has been customary to give but rarely cause symptoms of iodism. The increase of peristalsis which is sometimes seen can only be regarded as desirable and is due to the fatty nature of the drug. Its use in bronchial asthma and in emphysema also affords advantage.

Stricture of the Esophagus.—While the diagnosis of this condition is usually to be easily and satisfactorily made by means of the esophageal bougie, the use of this instrument is sometimes inadmissible owing to suspected aneurism of the aorta, hematemesis, the weakness or disinclination of the patient, etc. Under such conditions a method described by Holzknecht (*Deutsch. med. Woch.*, September 6, 1900) is likely to be of great value as it gives accurate information regarding the presence, locality, caliber and length of a possible stricture in a simple and painless way that is free from all risk. On illumination of the chest by means of an X-ray tube placed below the right shoulder and with the fluorescent screen arranged so that the line of sight runs from the left behind, forward and to the right the esophagus is visible as a light streak occupying the position between the dark masses of the heart and the vertebral column. On giving the patient a small quantity of water holding in suspension 15-30 grs. of subnitrate of bismuth, if a stricture be present, the fluid will be arrested at this point and a precipitation of the metallic powder takes place which will throw an appreciable shadow on the screen. This test is mainly useful in stenoses of small caliber and if it prove negative the bismuth should be enclosed in a capsule and the process of deglutition observed as before. If this, too, fails it may be well to repeat the experiment having preceded the administration of the capsule by the giving of a small morsel of bread which is sure to be arrested and so impede the progress of the test object.

Cerebral Abscess Secondary to Typhoid.—A. C. Brown (*Edinb. Med. Jour.*, September, 1900) reports a case which is interesting on account of its etiology, the difficulties in the way of diagnosis and the success of the treatment. No instance has yet been recorded in which pyogenic organisms gaining access to the circulation from the intestinal ulcerations of typhoid have been deposited in the brain with the production of a suppurative focus. In this case the patient, a girl of nineteen, developed the symptoms of Jacksonian epilepsy shortly after discharge from the hospital, where she had been treated for a moderately severe attack of typhoid fever. The nervous disturbances were purely motor in character, sensory symptoms and cerebral derangement being entirely absent so that the focal lesion could be definitely located in the right Rolandic area, as the convulsions affected the left arm and leg. The nature of the lesion was more difficult to determine, functional disturbance of the cerebral centers, abscess, tubercle and syphilis were one by one considered and rejected. Against abscess were the position of the lesion, the absence of any exciting cause or rise of temperature (a blood examination was not made), and a provisional diagnosis of a rapidly growing gliomatous tumor was made. On operation, however, the error was recognized and three ounces of pus evacuated, after which the patient made a complete and uneventful recovery.

THERAPEUTIC HINTS.

Castor Oil.—An easy method of administration is to moisten the glass with whiskey, and then pour into it successively:

Glycerin	ʒiij
Ol. Ricini	ʒss
Tr. Cardam. Comp	ʒi.

This is to be swallowed without mixing.

Acute Posterior Gonorrhea.—The patient is put to bed on a milk diet, the testicles suspended, and the bowels kept open. Alkaline mineral waters and the following formula are given:

℞	Potass. Bicarb	ʒi
	Tinct. Hyoscyam	
	Fl. Ext. Kava Kava, aa	ʒss
	Aq. q. s. ad	ʒviii.

M. Sig., ʒss in water two hours after each meal and before sleeping.

Relief is obtained from hot-water bags over bladder and perineum, from rectal injections of hot water, or the hot sitz bath; if the vesical and rectal tenesmus resist this treatment, use morphine suppositories. If retention of urine occurs, throw into the urethra a few drops of four-per-cent. cocaine before attempting catheterization. When the acute symptoms subside resume local urethral treatment and allow the patient up. —*J. R. Hayden, Manual of Venereal Diseases.*

Liquor Acidi Phosphorici Comp.—Under this name the late Wm. Pepper frequently prescribed the following:

℞	Calcium Phosphate	gr. xxiv
	Potassium Phosphate	gr. ij
	Magnesium Phosphate	
	Ferrous Phosphate	aa. gr. iv
	Syrupy Phosphoric Acid	♏ 50
	Water to make	ʒi.

Sig., ʒi t. i. d. after meals for an adult.

Emulsion of Linseed Oil.—In certain pulmonary conditions and as a general nutritive, W. H. Thomson prescribes the following:

℞	Ol. Lini	ʒ xv
	Ol. Gaulther	
	Ol. Cinnam	aa. ʒij
	Ac. Hydrocyan. dil	ʒiiss
	Glycerin	ʒv
	Syr. Simpl	ʒx
	Aquæ	ʒxxiv
	Chondrus	ʒss.

Ft. Emuls. Sig., ʒij-ʒiv t. i. d.

Premature Babies.—At the Sloane Maternity Hospital premature babies are either placed in an incubator, or enveloped in cotton, or surrounded by hot-water bags. At first they are given one-half to one teaspoonful of six-per-cent. sugar-of-milk solution every hour, and this is gradually increased by the addition of breast milk until the latter predominates. To promote sucking at the bottle they are made to cry, or their lips are moistened; if they will not suck they are fed by pipette. Gavage is seldom used as they do not stand it well. Incubator babies are kept in the incubator as long as premature, but the others are put to the breast in from three to ten days. If stimulation is needed, oxygen and brandy, a few drops at a dose, are employed. Modified milk, with fat, 1 per cent., sugar 6 per cent. and proteids, 0.33 per cent., may also be given.

Epidemic Conjunctivitis.—According to Hermann Knapp, in this affection the so-called "pink eye," cleanliness and mild antisepsis are the essentials. Among the solutions which may be used are sodium chloride, 1 to 1000; boric acid, 1 to 4 per cent.; potassium chlorate, ½ to 1 per cent.; corrosive sublimate, 1 to 5000, or silver nitrate 1 to 5000. For immediate relief, ice compresses lessen the inflammation and 4 per cent. cocaine removes the gritty sensation.

Anemia.—The anemia of chronic malarial poisoning is especially improved by iron. If enlargement of the spleen and engorgement of the portal circulation coexist, compound jalap powder should precede the iron; or the latter may be combined with resin of podophyllum, as follows:

℞	Quininæ Sulphat	ʒi
	Resinæ Podophylli	gr. iv
	Ferri Sulphat. Exsic	gr. xx.

M. Ft. pil. No. XX. Sig., one or two pills three times a day.—*Bartholow in Materia Medica and Therapeutics.*

Treatment of Corns.

℞	Extract of Cannabis Indica	1
	Salicylic Acid	10
	Oil of Turpentine	5
	Glacial Acetic Acid	2
	Cocaine (Alkaloidal)	2
	Collodion, q. s. ad	100.

M. Apply a thin coating every night, putting each coating on top of the preceding one, until finally the whole drops off, bringing the indurated portion, and frequently the whole corn with it.

Pulmonary Emphysema.—For twenty days out of each thirty take of potass. iodid., gr. xv., aq., ad ʒi, a teaspoonful at each meal. During the other ten days take a tablespoonful of sodii arseniat., gr. i., aq., ʒviij. Take at bedtime every eighth day a two-grain pill of aloes; avoid tobacco, and drink milk.—*Journal de Médecine, September 9, 1900.*

Eczema of the Scalp.—Joseph Max recommends corrosive sublimate, one grain, in one ounce of vinegar, to kill pediculi and remove the nits. This is used twice on the first day, followed for a few days by acetate of aluminum solution to allay the irritation, and then by the following ointment:

℞	Hydrarg. Sulph. Rub	gr. v
	Sulphur Sublimat	gr. xx
	Ol. Bergamot	gr. viij
	Vaselin q. s. ad	ʒi.

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No. 111 Fifth Avenue, New York.

Subscription Price, including postage in U. S. and Canada.

Per Annum in Advance	$4 00
Single Copies	10
With the American Journal of the Medical Sciences, Per Annum	7 50

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LEA BROTHERS & CO.,
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SATURDAY, OCTOBER 6, 1900.

THE BACTERIOLOGY OF THE INTESTINE IN ITS RELATION TO SURGERY.

Few subjects of equal magnitude command more earnest consideration than that of peritoneal infection. In these days when the triumph of highly-developed technic has inspired so many new outlooks in intestinal surgery no subject could possess more fitting interest than the relations of intestinal bacteriology to operative procedures on the stomach and intestines. It has become evident to more than one thoughtful student of surgery that any improvement on the side of infection in this class of cases must be sought for in fuller and more extended studies of the normal and pathological bacteriology of the intestinal tract. An important step which does much to place the whole subject on a more intelligent footing has recently been made by two American investigators, Drs. Cushing and Livingood (Contributions to the Science of Medicine by the pupils of Prof. William H. Welch, 1900), who made an experimental and surgical investigation of the bacteriology of the upper portion of the alimentary canal, with observations on the establishment there of an amicrobic state as a preliminary to operative procedures on the stomach and small intestine.

The investigations of Escherich, Popoff and Szegö have shown that the intestinal tube of infants remains sterile for some hours after birth, the duration of which apparently depends upon the interval elapsing before the earliest nourishment is given. Under ordinary conditions of life micro-organisms make their appearance shortly after birth in all parts of the digestive tract. In many animals the colon bacillus and its near allies seem to be, as in man, the chief obligatory forms. Although the bacterial flora is subject to variations according to the kind of food ingested, Lembke has abundantly demonstrated that the Bacillus coli alone remains constant and independent of diet. Aside from this ever-presiding organism and possibly one or two other forms which Macfayden and Ciechomski have found to be present with some constancy, all the other bacteria should probably be regarded more or less as accidental. And not alone that, but, notwithstanding the number of varieties which may be found at one level or another of the canal, the relative numbers of micro-organisms at different situations retain, during periods or intervals of digestion, a more or less definite proportion. Thus, the observations of Gilbert made upon the intestinal contents of dogs three hours after taking a meal of bread and meat showed an abundance of organisms in the stomach, a pronounced diminution in number in the duodenum, followed by a gradual augmentation to the ileocecal valve, where bacteria flourish in the greatest luxuriance. When the large intestine is reached there is a marked diminution in the numbers, with a slight increase proportionate to the distance from the cecum.

The importance of the stomach secretions in destroying bacteria has evidently been overestimated. The comparative frequency with which varieties of cocci were found in duodenal cultures by Cushing and Livingood tends to confirm this view; and the relative diminution in duodenum observers like Gilbert, Dominici and Escherich believe to be due to the dilution of the chyme by the biliary and pancreatic fluids, rather than to any very marked action on the part of the gastric juice. However this may be, experiments tend to show that there is a tendency on the part of the stomach to completely free itself, together with the end-products of digestion, from even micro-organisms which are resistant to the gastric juice. The normal viscus, then, when empty, is amicrobic; the same is also partly true of the duodenum.

The evidence of all recent studies sufficiently demonstrates that the only way to decrease the number of the intestinal flora is to decrease the number introduced with the food. Thus, on a purely milk diet Gilbert and Dominici found that a striking reduction in the number occurs. The observations of Cushing and Livingood fully attest the accuracy of these results. They further found that with an empty duodenum, during a period of fasting, practically no persisting bacterial elements could be demonstrated. During periods of active digestion, on the other hand, micro-organisms are often present in considerable numbers. Apparently, therefore, a close although temporary relationship exists between the flora of the ingesta and that of the entire digestive tract. The fact that bacteria do not lurk in or upon the mucous surface of the empty canal is one of most eminently practical importance, as will shortly be noticed.

That part of the work of Cushing and Livingood relating to surgical cases, illustrating the foregoing principles and their adaption to intestinal surgery, is of great interest; and will do much to encourage the application of these bacteriological results by other surgeons. Series of surgical cases were placed under varying conditions of diet preliminary to operation and the results of cultures from the bowel afterward noted. They were able to ascertain that when subjected to the ordinary methods of dietary preparation for anesthesia the number was generally reduced, but that in a certain group of cases, at all events, the preparation may not affect the organisms present in the canal and that these may be the cause of the ensuing peritonitis. Most important of all, they showed that by precautionary feeding, it is possible to bring about an amicrobic condition of the bowel with apparent certainty. This applies to a large class of cases, representing states of chronic gastritis from ulcer, carcinoma, dilatations, etc., with a percentage of hydrochloric acid varying from complete absence to a condition of hyperacidity. This amicrobic state is obtained by simple sterilization of all ingesta. The sterilization of the food cannot too strongly be insisted upon under these conditions. Pathologic bacteria are commonly enough found in food; for instance, it is astonishing with what great frequency streptococci may be found in such a universal food product as milk. Eastes (*Brit. Med. Jour.*, Nov. 11, 1899) in 186 specimens obtained from various sources found these organisms in 75.2 per cent. The mouth is rinsed with an antiseptic solution and the teeth are carefully brushed at intervals of a few hours, particular care being exercised before and after eating. When micro-organisms in numbers are found in the stomach-contents after a tested meal the stomach should be washed out morning and evening. Food is best given in small amounts and often from clean or preferably sterile vessels. Boiled water, sterilized milk, beef tea, albumen-water, and similar liquids may be given by the mouth, rectal feeding being substituted if necessary.

The simplicity of the method will appeal to all; its efficacy has been so thoroughly proven in such a large and varied group of cases that the striking results in patients operated upon for intestinal troubles invite prompt trial by all engaged in this kind of surgery. Peritoneal infection as a result of operations upon the stomach and intestines is too perilous a risk not to invite every effort to minimize its occurrence and dangers.

THE PREVENTION OF INSANITY.

PUBLIC opinion is only just ready for a discussion of this subject. Very wisely the attention of legislatures has first been called to the more imperative and economic side of the question, the "care" of the insane. The housing and clothing and feeding of the idiot and dement, as well as the confinement of the maniac, have been assumed by the tax-payer; and opportunity has been given to the relatives of these unfortunates to live their lives unhampered by the care of an insane person. This has insured greater care and a longer and more comfortable life to the patient than was generally possible under private care.

A further step has been toward the treatment of acute and curable insanities, and to this end much valuable pathological study of the morbid conditions of the brain has been pursued under State aid. The sociological relations of mental diseases to the community in the matter of ancestry, environment, occupation, and temperament, have been investigated, and alienists now stand in a position to state very definitely some of the most potent causes of insanity and to suggest how the increase of insanity may be prevented.

The increase of insanity must be admitted as a fact. After eliminating the elements which might give a false increase, such as the diminished death-rate owing to better care of the insane, the accumulation of senile cases, the better

means for obtaining statistics, the figures nevertheless show that there has been year by year a distinct *pro rata* increase, which, with a rapidly increasing population, makes a decided increase in the actual number of insane and a constant demand on the tax-payer for their care.

In England and Wales this increase, as reported by the Commissioners in Lunacy, was 3114 on January 1, 1899, over the preceding year. This fact, so startling from a social and economic standpoint, has furnished the text for a very practical and able discussion of the subject in an address on the "Prevention of Insanity" by R. Percy Smith, M.D., F.R.C.P. (Lond.), delivered at the opening of the Section of Psychology at the last annual meeting of the British Medical Association. He holds that the time has come when public opinion must be aroused to reduce the three great causes of insanity, *viz.*, (1) the propagation of the race by those of insane inheritance or those who have suffered from insanity; (2) the influence of alcohol; and (3) the causation of general paralysis by syphilis.

The first cause, "hereditary influence," gives the largest percentage of any cause of insanity and the most difficult to diminish by legal enactment. That there is a popular knowledge of the danger of marrying with insane inheritance is seen in the gossip connected with such marriage and often the wilful suppression of a taint in the family history where the marriage of sons or daughters or property are concerned; and it is well understood that cousins, when there is insanity or serious neurosis in a common ancestor, should not marry; but public opinion should be cultivated to understand the danger arising from the marriage of any two neurotic individuals, and that no person of insane or neurotic inheritance should marry another of insane or neurotic inheritance, even although their own health be apparently sound. It is the duty of the medical profession to advise against such marriages, and to point out the almost inevitable fatal result in the offspring.

With reference to the marriage of persons who have suffered from an attack of insanity, a prohibitive legislature would doubtless do much for the community. Such an enactment is in force for congenital imbeciles and chronic epileptics in some communities and should be made universal; but as the danger in such cases is more glaring and asylum restriction careful, there are not as many unsound offspring from such individuals as from the marriage of persons who have been temporarily insane. Medical opinion should forbid absolutely the marriage of any one who has suffered from an attack of insanity, and should advise against childbearing in women who have had attacks of puerperal mania due to inherited neurosis.

Next to direct inheritance, alcohol counts for the most potent influence in the causes of insanity. The alcoholic insane form about one-quarter of all admissions to asylums in England. They are generally the most dangerous and difficult to manage and in private life do the most harm. Many who are not included in the statistics of the insane are temporarily unsound and are free to abuse their families, ruin their health, and produce offspring of such neurotic tendencies that they are almost sure to join the ranks of the alcoholic insane in the next generation.

This is a matter in which careful legislation might aid the cause of society. Drunkenness, habitual or intermittent, when it interferes with the laws of society, should be subject to compulsory detention and treatment as much as insanity. "Even those," says Dr. Smith, "who hold the liberty of the subject so sacred as to wish to leave the alcoholic to drink himself to organic disease or insanity and his family to poverty might at least turn their attention to the fact that nearly a quarter of the insane are so either wholly or in part from a wholly preventable cause, and that in a large proportion of these cases the tax-payer has to bear the expense."

There seems to be no logical reason why legislature should not take as severe steps to prevent the spread of so ravaging a disease as syphilis as it does of measles or smallpox. If there were no syphilis, it is pretty safe to say there would be very little general paralysis, and another large and preventable cause of insanity would be eliminated. It is the opinion of Dr. Smith that if syphilis were made a notifiable disease, and the chances of its spread diminished, we should see a corresponding diminution in the number of cases of general paralysis, which ought to be looked upon as a truly preventable disease. As a proof of this statement it might be noted that in Finland, as the result of the hospital treatment of syphilis and the power given by the legislature enabling the compulsory examination of any suspected individual, syphilis has much diminished in the course of twenty years.

In our large cities where syphilis, alcohol, and fast living are most rife and where, in consequence, general paralysis occurs most frequently, it would be difficult at present to legislate these causes of insanity out of existence; but it would

be a long step toward improvement to get the public to realize that insanity is not an "affliction of the Almighty" or a "mysterious dispensation of Providence," but a disease which in most cases individuals bring upon themselves, or with their eyes open, hand down to their children.

If our race is to hold its own in the struggle for existence with other nations, it must not be reproduced by the individuals of weak nervous systems and degenerate or alcoholic types that are at present filling our asylums. The legal and forcible detention of all such by the State, with prohibitory marriage laws, will doubtless help the next generation; but medical advice and teaching to arouse public sentiment must do the rest.

THE MALARIAL EXPERIMENTS.

NEWSPAPERS of a certain class exploit so many discoveries in science, with so little regard for accuracy, that we are tempted to believe that they do it for the sake of making double copy in overthrowing the rumors that they have started.

But for once some of the English and Continental journals have overreached themselves and have begun to report exaggerations where none existed, and to deny the truth of conclusions that were perfectly just concerning the experiments to test the mosquito theory of malaria in the Roman Campagna.

As is well known, Dr. Luigi Sambon and Dr. G. C. Low, both connected with the London School of Tropical Medicine, have been living since June, 1900, in the malarial valley near Ostia, where the pestilence is so great that travelers who merely spend a night there generally contract the disease. They have lived in a mosquito-proof hut, and have not taken any quinine or other drugs preventive of malaria, with the result that neither they nor their attendants have had any symptoms of the disease. Nevertheless a report that the experiment had proved a failure was being widely spread to the public, until the *British Medical Journal* promptly settled matters by telegraphing for direct information. The following reply was received by the London School of Tropical Medicine:

ROME, 13 Sept., 6.25 A. M.

To Manson, Finically, London.

Assembled in British mosquito-proof hut having versified (verified) perfect health experimenters amongst malarial-stricken inhabitants, I salute Manson who first formulated mosquito theory. GRASSI.

The experiment at this date had still six weeks to run before the malarial season—and the mosquitoes—would disappear, but the demonstration of the formula "No mosquito, no malaria," seems to be satisfactory.

In further proof of it, Dr. Elliott, a member of the Liverpool expedition sent to Nigeria some time ago to investigate the subject of malarial fever, reported on his return that the members of the expedition had spent four months in some of the most malarious places, marshes and lowlands that were considered the most deadly. They had taken no quinine, but had carefully used mosquito nets at night, and not one of them had contracted the fever.

The positive side of the experiments on the mosquito theory of malaria is no less authentic and interesting. Dr. Manson's son, who had not been in a malarial district for many years, offered himself for experiment, as a complement to his father's work. He allowed himself to be bitten by mosquitoes that had been carefully brought from Rome, where they had been fed on the blood of a malarial patient. He contracted malaria of the double tertian type and the organisms were found by microscopical examination in his blood. The whole experiment was conducted and verified by scientific men; so that there remains no doubt but that the mosquitoes carried the organism from Rome to London. A similar experiment made in Bellevue Hospital, New York, gave like results. A young man permitted himself to be bitten by mosquitoes that had been fed on the blood of a malarial patient, and six days later began to show signs of malarial infection. While these observations of Berkely have not been carried to their final stages, the evidence already adduced by him tends in large part to substantiate the observations of Manson and of Ross. Anopheles claviger is not an uncommon form of mosquito with us and our experimenters have ample opportunities for investigating the truth of Manson's claims.

This discovery, while not wholly solving the malaria problem, is nevertheless undoubtedly true, as far as it goes. Mosquitoes are one of the main causes of malarial infection. The benefit to mankind of the work that has been done by scientific men who have been laboriously working out these experiments for the last few years is too great to be estimated, and it is grievous to have the much-believing public ready to accept their conclusions with an incredulous smile born of many previous deceptions.

ECHOES AND NEWS.

NEW YORK.

Dr. Doremus' Golden Wedding.—Dr. and Mrs. R. Ogden Doremus celebrated their golden wedding October 1, 1900.

New York Neurological Society.—At the last regular meeting of this Society, held October 2d, Dr. A. R. Defendorf read a paper on "Periodical Psychoses;" Drs. L. P. Clark and T. P. Prout on "Status Epilepticus: Its Nature and Pathology."

Gouverneur's New House Surgeon.—Dr. Frank P. Leadley, for the past two years house surgeon of Gouverneur Hospital, last week formally turned over the institution to his successor, Dr. Agnew H. Hilsman. The former will take up the practice of his profession in Rochester, N. Y.

Academy Notes.—Medicine once more takes on its wonted activity in this city after the summer's holiday. The Academy had its first general meeting, Thursday, October 4th, at which Dr. Jacobi read his complete report on "Infant Feeding," which was presented in abstract at the Thirteenth Medical Congress. Monday, October 8th, the Section on Surgery meets. Papers by Drs. J. F. Erdmann and A. B. Johnson will be read. New instruments will be shown by Drs. Willy Meyer and Carter Cole. On Thursday, October 11th, the Section on Pediatrics presents a discussion on the subject of "Antitoxin in Diphtheria." Papers will be read by Drs. H. F. Koester, W. H. Park and J. H. McCollom. Discussion by Drs. J. W. Brannan, W. P. Northrup, W. C. Deming, L. K. Neef and C. S. Benedict.

Insanity at Elmira.—An alarming increase of insanity among the convicts at the Elmira Reformatory has been reported to State Superintendent of Prisons Collins since March last, which period marked the close of the Brockway administration. Since March sixty-five insane convicts have been transferred from that institution to the State Hospital at Matteawan. The State prison authorities cannot account for the increase. The interpretation of this report is probably as follows: Many of the patients there were suffering from some form of mild psychosis, moral dements, paranoiacs, etc. Coming under a physician's eye their mental irresponsibility has been recognized and hence they have been transferred to the proper institutions.

Bellevue's Undesirable Help.—Inspector Robert W. Hill has published his report on visitations to the public hospitals and almshouses within the First Judicial District, which comprises the boroughs of Manhattan and the Bronx. The most interesting feature of the report, which is submitted to the State Board of Charities, is its sharp criticism of the present "poor help" system which is in use in the Bellevue Hospital and several other charitable institutions. Much of the coarser kind of work is done, not by regularly paid employees, but by men and women who are without a home and who are glad to obtain shelter and food in return for their services. The inspector found fifty-one women of that class located in an attic in one of the pavilions of Bellevue Hospital. On a stand in an antechamber he found seven empty whisky bottles, which had been smuggled in by the women the night before. Speaking of this kind of help, the inspector says: "These persons would be better off if sent over to the almshouse and the work which they are supposed to do given to paid employees. If better quarters were provided for the help, it would be possible to secure a better class, but so long as their present dormitory system continues the class of help will continue undesirable."

Dr. Lewis A. Sayre.—At a special meeting of the Executive Committee of the New York County Medical Association, held September 24, 1900, the following resolutions were unanimously adopted:

Whereas, It is our sad duty to announce the death on September 21, 1900, of our late associate, Dr. Lewis Albert Sayre, one of the founders of the American Medical Association, and its President in 1880; therefore be it

Resolved, That we place on record our high appreciation of the valuable services which he has rendered to medicine and surgery during his long and useful life;

Resolved, That his daring originality, his freedom from surgical traditions, along with his unflagging enthusiasm and interest in everything pertaining to his beloved profession, constituted him a teacher of rare excellence, whose pupils will cherish his memory long after the voice of their preceptor is hushed;

Resolved, That we extend, in the name of the members of the New York County Medical Association, our heartfelt sympathy to the afflicted relatives, and direct that a copy of these resolutions be sent to the family and to the medical journals.

Obituary.—Dr. Samuel Smith Purple, one of the early presidents of the New York Academy of Medicine and founder of the library of that institution, died at midnight Saturday at his residence, 36 West Twenty-second Street, from heart trouble, after a short illness. Dr. Purple was born in Lebanon, Madison County, N. Y., June 24, 1822, and was graduated at the medical department of the University of the City of New York in 1844. In 1846-48 he was physician at the New York City Dispensary, and was ward physician under the Board of Health during the cholera epidemic of 1849. He was vice-president of the New York Academy of Medicine from 1870 to 1875 and its president from 1876 to 1880, and was made second vice-president of the New York Genealogical and Biographical Society in

1888. He is the author of a large number of medical works. Dr. Purple's presentation of 4000 volumes to the New York Academy of Medicine was the beginning of that institution's library. At the time of his death he owned one of the largest private libraries in New York. Dr. Purple was unmarried.

Brooklyn Crowded.—The new census is showing many interesting facts relative to congestion of population. Taking the figures of the tenement-house population in Brooklyn, supplied recently by Dr. Byrne of the Health Board, and which had to do with 574,959 persons, or 49.2 per cent. of 1,166,582, Brooklyn's population, it is found that there is an average of 18.1 persons to a dwelling. To-day half of Brooklyn is housed as densely as Manhattan's population was in 1890. In that year Manhattan's entire population was housed at an average of 18.52 persons to a dwelling. It is seen that while Manhattan is yet the leading area of the world in the intensity of its housing problems Brooklyn is at least second in America. Figures obtained from the Department of Buildings in the boroughs of Manhattan and the Bronx show that the number of persons to a dwelling in Manhattan at the present time is 23.2.

PHILADELPHIA.

Scored by Coroner.—At an inquest over the body of a suicide recently the Coroner severely scored a morbidly curious man. The latter had gained access to the house by representing himself as a deputy from the Coroner's Court.

Water Company Arraigned.—The Springbrook Water Company of Wilkes-Barre has been charged with violating a city ordinance by furnishing impure water. Forty citizens, including councilmen and physicians, testified against the Company. The penalty is $100 for each day.

Epidemic of Diphtheria.—Diphtheria is epidemic in Millville, a suburb of Altoona. The State Board of Health was appealed to, but refused aid because of lack of funds.

Philadelphia Almshouse.— The Board of Charities and Correction has decided to add four graduates in dentistry to the staff of residents at the Almshouse. One is to be chosen from each of the four schools of dentistry here. They are to receive no salary.

New Society of Nurses.—The Philadelphia Society of Graduate Nurses has been organized and chartered under State laws with Joseph Haines as president. The object of the Society is to elevate the standard of nursing and to furnish the public with first-class nurses.

Whipping Post for Wife-Beaters.—The September Grand Jury has recommended the reestablishment of corporal punishment for wife-beaters. The members are also of the opinion that houses of refuge and reformatories for incorrigible boys do not tend to make good citizens, and recommend discharge with a caution for the first offence and punishment in the shape of a sound thrashing for succeeding offences.

Druggists Aroused.—The druggists of this city are aroused over what they call an unwarranted investigation of their affairs by the State Pharmaceutical Examining Board. A special agent of the Board is endeavoring to ascertain the competency of drug-clerks and also the cautions observed in the sale of poisons. It is believed that an effort is to be made to have the Legislature pass more stringent laws governing the sale of drugs.

Public School Hygiene.—School-teachers and janitors are wondering how they will enforce all the rules lately promulgated by the Board of Education, among others are the following: Teachers should forbid spitting on the floors. Children should be discouraged from eating candy at recess. Children should be required to put on overgarments during recess in cold weather, and urged to go into the open air. When a child appears with a soiled skin a note should be sent to the parents calling attention to that fact. The sanitary care of the houses is strictly enjoined.

Changes in Medical Schools.—The various medical schools of the city opened October 1st. The new year at the Medico-Chirurgical is marked by the completion of the new laboratory and dispensary building. The faculty of Jefferson has recommended that a laboratory of clinical medicine be established in connection with the proposed new hospital, the laboratory to be known as the J. M. Da Costa Memorial.—Dr. H. F. Harris has resigned the associate professorship of pathology.—At the University of Pennsylvania the first-year classes in medicine and dentistry are smaller than usual because of increased entrance requirements. Provost Harrison stated that the teaching of medicine was to be based upon scientific considerations instead of being viewed from a commercial standpoint. A radical departure in the medical curriculum is the confining of anatomy to the first year and physiology to the second year only, instead of extending both over the two years.

Alvarenga Prize.—The College of Physicians of Philadelphia announces that the next award of the Alvarenga Prize, being the income for one year of the bequest of the late Senor Alvarenga, and amounting to about one hundred and eighty dollars, will be made on July 14, 1901, provided that an essay deemed by the Committee of Award to be worthy of the prize shall have been offered. Essays intended for competition may be upon any subject in medicine, but cannot have been published, and must be received by the Secretary of the College on or before May 1, 1901. Each essay must be sent without signature, but must be plainly marked with a motto and be accompanied by a sealed envelope having on its outside the motto of the paper and within

the name and address of the author. It is a condition of competition that the successful essay or a copy of it shall remain in possession of the college; other essays will be returned upon application within three months after the award.

The Alvarenga Prize for 1900 has been awarded to Dr. David De Beck, of Cincinnati, Ohio, for his essay entitled, "Malarial Diseases of the Eye." Thomas R. Neilson, M.D., Secretary.

CHICAGO.

Norwegian Hospital.—The medical staff of this institution has founded a library for the use of patients and attendants. It consists of 500 volumes and represents an outlay of about $1000.

South Chicago Hospital.—This will soon be opened. A house containing thirteen rooms has been purchased and is now being renovated and prepared for patients.

Appointment of Dr. Pennington.—Dr. J. Rawson Pennington has accepted the Chair of Rectal Surgery in the Chicago Policlinic. Formerly he held a similar position in the Chicago Clinical School. He will assume his duties at once.

Appointment of Dr. Parker.—Dr. William R. Parker has been appointed Commissioner of Health of Evanston, to succeed the late Dr. A. B. Clayton. The appointment was confirmed by the City Council.

Illinois Medical College.—At the Sixth Annual Commencement of this College, recently held, nineteen men and one woman received the degree of Doctor of Medicine. The degrees were conferred by President Randolph N. Hall, after which the Doctorate Address was delivered by Professor Robert H. Walsh.

Metropolitan Medical College.—On the petition of Attorney-General Akin, Judge Hanecy has issued an injunction restraining the officers of this institution from conducting its business in violation of the terms of the charter. At the final hearing of the suit the Court is asked to dissolve the corporation, which is declared to have conducted a fraudulent business and abused and violated its charter since its organization in September, 1896. The basis of the petition is that the college, while advertising that it is a legitimate institution, does not require personal attendance of applicants for the degree of Doctor of Medicine. The specification states that "this system of conferring degrees is dangerous to the health of the people, is a usurpation, misuse and abuse of the power conferred upon said college as a corporation."

Injurious Desks.—Acting under the directions of Dr. W. S. Christopher of the Board of Education, the child-study department has taken up the question of desks and the effect of the present accommodations on the health of the pupils is being carefully investigated. The Committee will probably present a report in a few weeks. If it is not favorable to the desks now in use, a strong effort will be made to change them.

Dentists Poisoned at a Dinner.—Twelve of twenty-four members of the Delta Sigma Delta fraternity were poisoned by food eaten at a dinner September 29th. Canned salmon is thought to be the cause of the ptomain-poisoning. Although some of the men are still in a serious condition, it is not thought any of the cases will prove fatal. All afflicted are dentists. Commissioner Reynolds of the Board of Health has secured samples of the food eaten for chemical analysis. The salmon was obtained out of town, and it believed to be a lot from a burned cold-storage plant at St. Paul that was suspected. The Health Department has been trying to keep it out of Chicago.

GENERAL.

Huxley Lecture.—Lord Lister delivered the Huxley Lecture for 1900 at St. Martin's Town Hall on October 2d.

University of Glasgow.—The Chair of Clinical Medicine at the University, made vacant by the promotion of Dr. McCall Anderson, an appointment for life with fees and salary aggregating $1170, is being eagerly sought for by the following candidates: Drs. James Finlayson, Samson Gemmell, G. S. Middleton, J. L. Steven of Glasgow and by D. A. Morison of London.

European University News.—Dr. Constantin Savas has been appointed ordinary Professor of Hygiene and Bacteriology of the Athens medical faculty.—Breslau University has elevated Dr. Richard Stern from private-docent to extraordinary Professor of Internal Medicine.—At the University of Copenhagen Dr. Oscar Wanscher has been promoted to extraordinary Professor of Surgery.—Dr. Oscar Schulz has been appointed private-docent in Physiological Chemistry at the University of Erlangen.

Cuyahoga Ohio County Medical Society.—At the October meeting of this Society a symposium on appendicitis will be held. The following papers are to be read: "Etiology of Appendicitis," Dr. Guy H. Fitzgerald; "Diagnosis of Appendicitis," Dr. Charles B. Parker; "Diagnosis of Appendicitis," Dr. Charles G. Foote; "Medical Treatment of Appendicitis," Dr. L. B. Tuckerman; "When Shall We Operate," Dr. Frank E. Bunts; "Operation in the Interval," Dr. N. Stone Scott; "Operation During Attack," Dr. Geo. W. Crile; "Complications During Appendicitis," Dr. Morris Stepp; "Appendicitis and Typhoid Fever," Dr. Charles J. Aldrich; "Appendicitis in Children," Dr. Joseph V. Kofron; "Appendicitis and Pelvic Disease," Dr. R. E. Skeel; "When Do I Call the Surgeon?" Dr. J. H. Lowman; "Hernia Following Operation for Appendicitis: Causes and Means of Prevention," Dr. Carl A. Hamann.

Woman's Medical Fraternity.—The Syracuse Society retracts its claim to be the first woman's medical fraternity.

Asphyxiation in an Asylum.—Ten inmates of the insane ward of the Lowell (Mass.) city farm narrowly escaped asphyxiation by gas at an early hour September 29th.

Morphine Habit in a Dog.—An Irish setter owned by a physician of Philadelphia was recently run over and had his back severely injured. Feeling sure the dog would die, the doctor began to experiment with morphine. One morning he forgot to give the dog its injection. It crept into the office and lay at the doctor's feet. He was unable to understand its queer antics. Finally it crawled to the medicine chest from which he had taken the morphine, and, looking up at the chest, it began to whine. The doctor wondered if the dog was really trying to make him understand that it wanted its injection. He took the hypodermic from the chest. When the dog saw the syringe, the report says that it barked gladly and lay on its back, whining for the doctor to inject the drug.

Beer for Hiccoughs.—Hiccoughs bid fair to become as popular a malady in prohibition districts in Kansas as snake-bites have been in the past. After hiccoughing without intermission for 100 hours Dr. H. A. Pickerel of Beverly was brought to Salina, and twenty-two hours later he was cured of his trouble by a bottle of beer.

Medical Society of Missouri Valley.—This Society held its annual meeting at Council Bluffs, Iowa, September 20th. Three sessions were required to complete a most interesting program, and later, at the Grand Hotel, the members gathered around the festal board, where they recuperated from the labors of the day. The Society voted to contribute $25 to the Rush Monument Fund, and a resolution was adopted providing for a banquet after each meeting. The following officers were elected: President, Dr. V. L. Treynor, Council Bluffs; First Vice-President, Dr. B. B. Davis, Omaha; Second Vice-President, Dr. F. E. Sampson, Creston; Treasurer, Dr. T. B. Lacey, Council Bluffs; Secretary, Dr. Chas. Wood Fassett, St. Joseph. The next meeting will be held March, 1901, in Omaha.

Cider as a Cure of Gout.—The largely increased consumption of cider far away from the producing counties, to which it was almost confined a few years back, shows, at all events, that a good many people prefer a less heavy drink than beer. But the enthusiastic advocates of the West Country beverage begin to advance far more ambitious pretensions on its behalf. Not only do they proclaim it an antidote to gout, and relate how a certain Royal Duke once cured himself of that disorder by restricting himself to pure Devonshire cider, but the pleasant tipple is represented as having remedial effects in many other diseases.

Poison Ivy.—Dr. Pfaff of Harvard has investigated the poison of *Rhus radicans* and finds it to be a non-volatile oil, present in every part of the plant, which cannot be washed off the skin with water alone. It is said that a remedy has been discovered in the form of a saturated solution of alcohol, of 50 to 75 per cent. strength, and sugar of lead; and that its efficacy has been tested by the Department of Agriculture.

Yellow Fever.—A board of officers, consisting of Major Valery Havard, Surgeon, and Major William C. Gorgas, Surgeon, United States Army; Surgeon A. H. Glennan, United States Marine-Hospital Service; Dr. Augustin Varona, Dr. Vincente Benito Valdes, and Acting Assistant Surgeon T. C. Lyster, has been meeting at Havana, Cuba, for the purpose of inquiring into and reporting upon the feasibility and advisability of establishing a detention camp near Triscornia, Cuba, for the detention of immigrants who arrive at Havana, in order that the spread of infection may be prevented.

Pan-American Medical Congress.—The third meeting of the Pan-American Medical Congress, as already announced in the MEDICAL NEWS, will be held in Havana, Cuba, December 26, 27, 28 and 29, 1900. Invitations from the Secretary of the Executive Committee have been received and members are urged to specify their intention of going to the Congress and further asked to forward the titles of papers to be read to Dr. T. V. Coronado, Prado 105, Havana, Cuba, Secretary of the Committee on Organization.

The Cause of Temperance.—A British temperance journal has been publishing a prescription for "a substitute for brandy" in cases of faintness or severe pains. It consists of "equal parts of the strongest tincture of ginger, sol volatile and chloric ether." Temperance people have had the recipe printed on cards and distributed with the injunction: "Pass it on." The *Lancet* points out that brandy usually contains about 50 per cent. of alcohol, whereas of the temperance ingredients the tincture of ginger is essentially pure alcohol, the sol volatile contains alcohol in the proportion of 6 parts out of 9½ and the chloric ether has 95 per cent. of alcohol. The mixture, therefore, contains 83 per cent. of alcohol compared to 50 per cent. in brandy, and is, no doubt, extremely efficacious.

Cost of Medical Education in London.—According to the *Lancet* the minimum sum a student must be prepared to spend in London during a year on board and lodging is $300. He can, however, save 20 per cent. of this expenditure by living with a fellow-student. He must be prepared to spend at least $50 more in books and instruments. He will be almost the exception if he does not incur one or two extra liabilities in the way of special tuition during his five years' career. He will require another $50 for pocket money, and to these figures must be added his

fees and the price of his clothes. "We do not think that in London any young man should be asked to attempt to maintain himself and pay the necessary fees and expenses of his medical education upon a less sum than $500 a year. If a student cannot command personally, or by allowance from his parents, $500 per annum, and look to receiving it regularly for at least four out of the five years of his curriculum, we consider that he is rash, in these exacting days, to embark upon our profession."

The "Salt-Lake."—At Odessa the so-called Limancure is becoming popular. The Limans are sheets of water originally connected with the sea, but which have been isolated and converted into salt lakes. Owing to evaporation their waters have become concentrated, and are thought to possess considerable therapeutic value. There are three of these Limans near Odessa. The principal salts they contain are the chlorides of sodium, potassium, and magnesium; calcium sulphate and magnesium, or sodium bromide. Their bottoms are covered by a black slimy substance composed of a sponge of animal and vegetable matter impregnated with salt water, and contains iodine, bromine, sulphur, sulphuretted hydrogen, and oleic and valerianic acids. Patients bathe either in the open lakes or in baths with the water at various temperatures and degrees of concentration. They also have slime baths. The diseases treated are chronic rheumatic affections, scrofula, rickets, stiffness of the limbs, and certain chronic skin diseases. Considerable discomfort (depression of spirits, digestive disturbances, palpitations, etc.) is frequently experienced at the beginning of the cure, but soon passes off.

The Plague in Egypt.—The Sanitary Department of the Ministry of the Interior at Cairo has just issued a report on the plague in Egypt, covering the period from May, 1899, to July, 1900. It begins with a full account of the outbreak in Alexandria, which began in the first-named month and the last case of which occurred on the 5th of the November following. In all 96 cases became known to the authorities, and it was estimated that 27 more, of mild character and followed by recovery, might possibly have escaped notification. These 96 were made up of 66 natives and 30 foreigners, the latter mostly Greeks, Frenchmen, or Italians employed in groceries, bakeries, wine shops, or at restaurants. The mortality among reported cases was 48 per cent., and there was reason to believe that no death from plague escaped notice. The precautions taken for arresting the course of the disease appear to have been admirably devised and conducted, and are set forth under the three heads of: (1) Measures to assure prompt discovery of each case of plague, and of all suspicious cases; (2) direct measures to prevent the propagation of the disease from individual cases; and (3) indirect measures, such as general cleansing of dirty quarters, with a view to eliminate all conditions favorable to the existence or propagation of the disease. A sum of £30,000 (Egyptian) was granted by the Caisse de la Dette to defray the extra expenses, and was placed at the disposal of the Director-General of the Sanitary Department, but the total outlay exceeds this sum by £4000 (Egyptian), and the whole of the work required is declared to have been carried out with great discretion and tact, and with the minimum of offense to religious or other susceptibilities of the natives.

Cancer in Germany.—The Prussian Government has initiated systematic inquiries with a view to amplifying the world's knowledge on the subject of cancer. Every registered physician has received a paper of questions calling upon him to give his experiences in cancer cases. The principal points are whether cancer is hereditary and contagious, whether it is connected with a particular habit, such as indulgence in alcohol, tobacco, etc., or whether it is more prevalent in one district than another.

The Plague at Glasgow.—New developments concerning the plague situation at Glasgow indicate the gradual abatement of the epidemic. About five new cases have been reported during the past week. All of these occurred in suspects and were immediately isolated.

CORRESPONDENCE.

INFECTION AND INTOXICATION.

To the Editor of the MEDICAL NEWS:

DEAR SIR: I have read with profit the interesting and suggestive communication by Dr. Eugene Wasdin on "Toxicity versus Septicity in the Infectious Pathogenic Bacteria," and wish merely to make a plea for the abandonment or, at least, the more qualified use of the terms "sepsis," "septicemia," "sapremia," and their derivatives, as being vague and indefinite, if not actually ambiguous. These words came into use at a time when our conceptions with regard to infection and intoxication were much more crude and less sharply defined than they are at present, and they were indiscriminately applied to both of the states mentioned, but now, when it has become so important to appreciate their differentiation, the necessity for precision in expression must be obvious. "Infection" may be defined as "a condition dependent upon the lodgment and activity of parasites in or upon the body." It may be local or general, and in the latter event, when the parasites are bacterial, the designation "bacteremia" may be employed. "Intoxication" or "toxemia" may be due to the products of bacterial activity, to the retention in the body of products of abnormal metabolism, qualitatively or quantitatively, or to the introduction of poisons from without.

AUGUSTUS A. ESHNER.

Philadelphia, October 1, 1900.

OUR LONDON LETTER.

[From Our Special Correspondent.]

LONDON, September 22, 1900.

THE PLAGUE IN GLASGOW—SANITARY PRECAUTIONS—THE OUTBREAK SUBSIDING—PRECAUTIONS IN LONDON—DEATH OF SIR J. B. LAWES—THE HOSPITAL COMMISSION IN SOUTH AFRICA—MR. TREVES ON THE HORRORS OF WAR—DEATH FROM A BEE-STING.

ALTHOUGH a large amount of attention has been devoted to the outbreak of plague in Glasgow, its source has not been definitely ascertained. All that is known is that the man in whose house the first case occurred worked as a dock laborer exclusively in vessels trading with home ports. He became ill after his wife and grandchild had died, presumably from plague, and may have been infected from them. They were supposed to be suffering from "acute gastroenteritis" and "zymotic enteritis" respectively. The man became ill on the day following his wife's funeral, which took place on August 11th. In a house in a neighboring street the disease suddenly developed in a family which had visited the first during the illness. A child aged ten years was taken ill on August 19th and died on the 21st. The doctor who was called in ten minutes before death diagnosed "acute pneumonia." On the 20th the mother, on the 22d a brother, and on the 23d a half-brother, aged three became ill. The two doctors who attended the patients were puzzled as to the nature of the disease. They regarded it as certainly infectious and notified it to the health authorities as possibly typhoid fever. In the cases of the dock laborer and the subsequent ones the disease proved to be plague, the bacillus being found in all. The patients were removed to hospital. In another neighboring street a woman who had recently been confined was taken ill on August 25th with symptoms resembling those of typhus fever, but the case proved to be one of plague. She had associated with the first family during their illness. A search was made in the houses in which the disease occurred and two other cases were discovered. All the persons who had visited these houses (89) were removed to reception-houses of the sanitary department. Four subsequently developed plague. Two other cases were found in houses near those in which the disease had occurred in men who appear to have been in contact with the patients. Most elaborate precautions have been taken by the authorities to check the spread of the disease. The district in which the outbreak occurred has been placed under special sanitary rules. Ashpits will be emptied three times a week and washed once weekly with chloride of lime whitewash. Dirty back courts will be hosed every night with chloride of lime solution. A special inspection of the district has been organized for the detection of dirty and overcrowded houses. The occupants of infected houses and all those who have been in contact with patients will be offered inoculation with Yersin's serum; those living in the neighborhood, with Haffkine's prophylactic. The nurses in charge of the cases have already been inoculated. Ratcatchers have been employed to clear the district of rats. A rather alarming fact is that a fatal case has occurred in the adjoining burgh of Govan on the south of the Clyde immediately below Glasgow. Clinically, the disease has manifested itself in three forms, (1) cases with solitary bubo; (2) cases in which several groups of glands were involved, and (3) mild cases which could not be recognized but for the history of infection. Should any cases of plague occur in London the Local Government Board is well prepared to combat the disease. At the British Institute of Preventive Medicine there is a store of Haffkine vaccine for inoculating suspected persons and arrangements for isolation have been already made. Every vessel arriving at the port of which the slightest suspicion is entertained is boarded and inspected by the sanitary authorities. The official bulletin issued at Glasgow shows that the position is as follows: In hospital suffering from plague 13, suspected 1, in reception-houses under observation 111. As the maximum period of incubation is fourteen days, it is now hoped that the outbreak has spent itself. The last report raises the cases in hospitals to 16 and the persons under observation to 112.

The death is announced of Sir J. B. Lawes, the great agriculturist, who a lay paper declares has done more good for his country than the whole race of politicians. To him more than to any other man was due the wonderful change that has taken place in agriculture during the past sixty years. He introduced the process for converting bones into soluble phosphatic manure. In conjunction with the celebrated chemist, Dr. Gilbert, he carried out a number of important feeding experiments on live stock which have been extensively quoted in physiological works. They invented a number of different manures to be used according to the nature of the crop to be raised, corn, barley, oats, or grass. The ingredients consisted of varying quantities of potassium, sodium and magnesium sulphates, superphosphates and ammonia salts. The wonderful effect of these manures is shown by the fact that in one case where the wheat manure was used the average yield was 59 bushels of corn and 41⅛ cwt. of straw per acre, whereas the unmanured plots of the same land only gave 19⅞ bushels of grain and 10¾ cwt. of straw.

The Hospital Commission has held sittings at Bloemfontein. Major Bedford detailed the disposition of the various hospitals. He admitted a shortage of ten field hospitals and said it was most difficult to meet requirements as operations extended. When the Army landed everything was practically upset. In Natal, whenever a unit arrived, it was sent where it was required with the result that the bearer companies and field hospitals got very much mixed. Colonel

Exham, the principal medical officer, said that the largest number of men in hospital at one time was 5000 and the maximum number of patients sent down to the base in one fortnight was 2000. Bloemfontein never suffered from lack of medical officers or equipment. In one month the hospitals dealt with 13,000 sick, a number which would tax the resources of London. At Hex River the Commission unexpectedly met an ambulance train on the way from the front and paid it a surprise visit of inspection. Several patients were questioned and all said they were satisfied with their treatment.

Mr. Treves thus describes his first experience of the battlefield: "I do not know that I ever wish to see a battlefield again; the horrors of it cannot be exaggerated. People have expressed a hope of seeing the fun! Well, I found it very sorry humor indeed. The heat was very intense and poor "Tommy" came back to the camp almost unrecognizable by reason of blood, and dazed and speechless from thirst. Everybody longed for the night." Describing the hospital arrangements, he says: "We had no camp to go to, so the nurses slept on the boards of a looted store and I slept in a cart. Better nurses and more devoted women I never met; they gave poor "Tommy" all they had—their water-bottles, their handkerchiefs, and even their mattresses to lie on. Their very presence amongst the dead and dying was something, and they thought of means of relief that would not have occurred to us men."

A short time ago I sent an account of a case in which a bee-sting proved fatal to a young lady. Another case has just occurred in which the patient was a child ten months old. It was stung while lying in its cradle and death supervened in a few hours. At the necropsy it was found that the child had been stung over a vein on the face which gave rise to cerebral thrombosis.

TRANSACTIONS OF FOREIGN SOCIETIES.

British.

ASTHMA AND THE FRONTAL SINUS—APHASIA AND HEMIPLEGIA—PATENT DUCTUS ARTERIOSUS—FILARIA SANGUINIS AND MOSQUITOES—TRAUMATIC RUPTURE OF THE HEART—RESIDUAL URINE AND THE PROSTATE—OCULAR PARALYSIS—INFLUENZA AND PARALYSIS—SYPHILIS AND LUPUS—MYXEDEMA IN THE MALE.

L. Turner, at the Edinburgh Medico-Chirurgical Society on July 4, 1900, exhibited a man afflicted with asthma and chronic suppuration of the left frontal sinus and left maxillary antrum. The antrum was first opened, evacuated and drained. Later the frontal sinus was trephined, curetted and drained. Trickling of pus into the nose thereupon ceased and the asthma improved greatly.

W. Russell exhibited (1) the brain and heart from an aphasic and hemiplegic of long standing. Sunstroke had occurred twelve years previously. In the left hemisphere were many large cysts, fluid contents, due to embolism of one of the middle meningeal branches. The heart showed old vegetative endocarditis, especially mitral in side. An old aneurism of the aorta also was present. (2) The brain of a recent case of aphasia and hemiplegia. The lesions almost duplicated the above, but were due to thrombosis following extensive middle meningeal atheroma. The thrombosis and embolism had produced the same effects, namely, brain-tissue softening and cyst formation.

Dr. Pearson for G. A. Gibson showed (1) a patent ductus arteriosus, diagnosticated during life and proved by autopsy, due to right lobar pneumonia. (2) Specimens of filaria sanguinis lodged in the proboscis and muscle of a mosquito.

H. Littlejohn displayed (1) the heart of a youth caught between the buffers of two railway carriages. Although there was no external traumatism and no fractured rib, the right auricle was ruptured for nearly two and a half inches. (2) The stomach from two carbolic acid suicides; the first, ten ounces of the acid having been taken, presented the typical contracted, leathery appearance, with thick white putty-like material over the mucosa; the second took ordinary disinfecting carbolic solution out of a beer-bottle and died in fifteen to twenty minutes, although the solution was weak. The point learned from these specimens is that the stomach-tube should always be used although the poison may have been corrosive. The danger of puncture by the tube is much less than of absorption of the drug left in the organ. (3) The liver and other organs from a case of acute yellow atrophy of the liver or of phosphorus poisoning. The patient was illegitimately pregnant and marriage had been refused by her lover. Abortion followed ingestion of the poison and death in thirty-six hours. The uterus was normal and precluded the possibility of septicemia. The liver was atrophied. The tests for phosphorus had been negative but that did not preclude the likelihood of this drug having been used. The stomach was also shown to illustrate post-mortem digestion.

A. Bruce showed the brain of a long-standing aphasic and right hemiplegic. His symptoms had been good comprehension of spoken language, faulty comprehension of written language; unintelligible voluble utterance; good memory and utterance of music, in songs the words were lost, but the rhymes preserved; extraordinary power of mimicry. A zone of softening extending along almost the whole fissure of Sylvius, the superficial portions of the temporal lobe escaped, and the angular and marginal gyri were almost entirely free from softening.

A. G. Miller read a clinical note on residual urine and enlargement of the prostate. Catheterism early established appears to be the ordinary way of dealing with the enlarged prostate and residual urine. The condition of the gland in itself need not be especially disastrous,

but when the residual urine appears at all in large quantity the real trouble begins. In the normal individual the bladder distention reaches a certain point, causes discomfort and leads to emptying. This function is usually accomplished by voluntary relaxation, involuntary expression and atmospheric pressure. Thus, by habit when the prostate hypertrophies and offers a mechanical bar, really no voluntary expulsion is performed. He quoted a case in which under instructions the patient, instead of at once taking to catheter-life, first voided his urine, then after a few moments made a direct voluntary effort to really empty the bladder. The result had been less getting up at night, amelioration of all the symptoms, and reduction of the residual urine to a half-ounce. In his opinion this was very well worth trying on all cases before adopting catheter life. In locomotor ataxia in which early symptoms of bladder difficulty manifest themselves, the intelligent carrying out of the principles of using the voluntary muscles for expulsion of the contents of the bladder will often delay the commencement of the use of the catheter for many years. It called for intelligent, faithful regular effort, instead of laziness, indifference and ignorance on the part of the patient, and if begun before profound bladder changes have ensued, much good can commonly be expected.

A. BRUCE read the autopsy report of a case of complete paralysis of the upward and partial paralysis of the downward movements with conservation of the lateral conjugate deviation functions of the eye. This is a very rare affection, while its converse is common, namely, loss of the conjugate deviation while the upward and downward motions persist. The sixth nucleus innervates directly the external rectus of its own side and indirectly the internal rectus of the opposite ball and is so isolated from the third and fourth nuclei as to render focal lesion of it possible and common. But to have it escape while the other two are destroyed is very rare and pathologically curious. This patient was a hard-working woman, who was overtaken with absolute inability to turn the eyes up, very slight power to look down, while sidewise coordinated function was perfect and convergence, at first perfect, also gradually failed; remarkable unsteadiness in gait and inability to stand erect or sit up in bed without support were present. Ferrier stimulated the anterior part of the middle cerebellar lobe and obtained backward movement of the head and upward turn of the eyes, irritation of the posterior part caused the eyes to be depressed and the head carried forward; still farther back appeared to be centers for the conjugate deviation of the eyes. The post-mortem showed a glioma arising in the grey matter, growing backward along the aqueduct of Sylvius, upward into the third ventricle, sparing the sixth center and accommodation, situate in the midline, projecting into the back part of the third ventricle and not arising from the optic tract.

A. JAMES said that when influenza attacks the nervous system almost any effects may be expected. In his ward three cases of profound influenza poisoning had showed a rapidly ascending paralysis (Landry's type). The following is the history of a clear case: Female; twenty-three years old; attacked by influenza seven months and again two weeks before admission during the activity of the disease; pains in the head and back; delirium; insomnia; periods of rational consciousness; globus hystericus. Physical examination on January 31, 1900, showed temperature 103° F., pulse 130, respiration 22; inability to answer questions; persistent outcry of pain; paralysis of arms and legs, not of diaphragm (as far as could be ascertained); normal sensorium; absence of superficial and deep reflexes; marked impairment of deglutition; Cheyne-Stokes respiration when awake, normal when asleep; slight paresis of upper lip later; complained of pain behind the sternum. Death ensued in the midst of an attack of wild delirium and clonic spasm of the head. In short, the course was one of a rapidly ascending and finally of a fatal bulbar paralysis.

FLEMING read the following autopsy notes of the above case: Viscera normal except incipient broncho-pneumonia at the base of the left lung, cloudy swelling of the liver and kidneys, hemorrhage into the spleen. The cerebrospinal system showed firm posterior adhesions of the dura mater; normal pia and arachnoid; general congestion and edema of the grey cerebral matter; no degenerations in the cord-columns; disappointing almost negative lesions in the cord-cells; swelling of medulla-cells and the cells of the anterior cornua; eccentric nuclei and considerable chromatolysis in these same cells; marked atrophy and deep staining of the lumbar and cervical anterior horn-cells with microscopic red blood-cell diapedesis about them, like minute hemorrhages.

N. WALKER brought before the society two late syphilides which were instructive from the standpoint of diagnosis. In the first case the decision lay between late syphilis, lupus erythematosus and lupus vulgaris. These points made the diagnosis clear although the site was over the nose, a small punched-out ulcer, rapid development within six months, history of secondaries and results of treatment. The other patient was a nine-year-old child with large nummular masses over the left half of the body and thigh; when these came away large punched-out syphilitic ulcers remained. The treatment was only the tying-on of a large bib to maintain mercury in apposition with the skin.

W. RUSSELL presented a male, fifty-eight years old, victim of myxedema, a disease more rare among men than among women. Complete baldness established through three years; incipient alopecia of the whiskers and beard; mental lethargy; slow speech; malar flush and swollen eyelids were all present.

SOCIETY PROCEEDINGS.

AMERICAN ASSOCIATION OF OBSTETRICIANS AND GYNECOLOGISTS.

Thirteenth Annual Meeting, Held at Louisville, Ky., September 18, 19 and 20, 1900.

First Day—September 18th.

The Association met at the Galt House under the presidency of Dr. Rufus B. Hall of Cincinnati, Ohio.

Dr. Lewis S. McMurtry of Louisville welcomed the Association on behalf of the local medical profession. The address of welcome was responded to by President Hall.

Bilateral Inguinal Celiotomy.—Dr. A. Goldspohn of Chicago considered the erroneous objections to bilateral inguinal celiotomy and shortening of the round ligaments via the dilated internal inguinal rings, and its superior ultimate results in simple and complicated aseptic retroversions of the uterus. For a description of the technic of his operation, the writer referred to his previous articles on this subject. He laid stress upon cutting only through the skin and fat and making the required opening through the aponeurosis, the canal and the internal ring bluntly. The ring is very readily dilated sufficiently to admit one or, if needed, two fingers, and to admit of drawing out the tube and ovary for the exercise of the highest degree of delicate and exact conservative surgery upon them without doing violence to their supports. The wound is closed in four layers *à la* Bassini. In the second layer the round ligament becomes placed as in a sandwich between the posterior surface of Poupart's ligament and a good bundle of elastic muscle at each stitch which makes hernia impossible, and saves the ligament from strangulation while it holds firmly enough against Poupart's ligament to secure a broad union. This hernia has not followed the writer's operation in fully 125 cases that he has examined or had reports from. As the internal inguinal ring is just in front of the normal lateral location of the ovary and ampulla of the tube, these organs and the posterior surfaces of the uterus can be reached by one finger in a one-inch opening here as well as by two fingers in a two-inch opening in the linea alba midway between the symphysis and the umbilicus, and for the necessary access to the pelvic wall to shorten the proper suspensory ligament of the ovary and tube, this small opening serves well; while a large median ventral incision and much traumatism of viscera by that route would be needed, and by the vagina it cannot be done at all.

round ligaments are always present if the uterus is. In fully 190 cases, including 75 simple Alexanders, he has found both ligaments in each case after his pupilage on about one dozen dead women. But in four patients he traced one from within the pelvis outward. He has never had a death from the operation. But one case died from a serious renal complication that was not previously discovered, owing to an exchange of samples of urine by a nurse. Thorough shortening of the round ligaments via their natural channels and anchoring forward (not laterally) is the only operation that has been proven, or is likely to be proven, to stand what the writer demands as the normal standard for all operations of this kind, and has called it the "double test of pregnancy," *i. e.*, that they do not embarrass gestation and complicate labor, which is the single test, but also do not permit a recurrence of retroversion of the uterus after one or more subsequent labors. The difficulties in diagnosis as to presence of pus are no more than proficient gynecologists will meet successfully, and doubtful cases can be cleared up by ten to fourteen days in bed with temperature douches and extensive fomentations. The scars being in the groins, and covered mostly by hair, are not seen like regular laparotomy scars. In the discussion, Dr. Charles G. Cumston of Boston said that from his experience in operating both by the abdomen and vagina, as well as from a pathological standpoint, it has always seemed to him that serious lesions of the adnexa, such as the essayist had treated through a bilateral inguinal incision, are usually out of reach, and that these lesions can be dealt with more easily and satisfactorily through a median, a posterior, or anterior vaginal incision. Simple, uncomplicated cases of retroversion are rare. The Alexander operation in the so-called simple cases of retroversion can be greatly improved by an additional operation through the posterior cul-de-sac. Dr. J. Henry Carstens of Detroit, Mich., rarely sees cases of plain, uncomplicated, non-adherent retroverted uteri that require the Alexander operation. The complicated cases of retroversion require some other operative procedure. Dr. W. E. B. Davis of Birmingham, Ala., referred to the indications for performing the Alexander operation, and called attention to the class of cases in which it should be performed. Dr. Frederic Coggshall of Boston has performed over a hundred Alexander operations in combination with some other operative procedure. In simple, uncomplicated cases of retroversion of the uterus the organ can be easily replaced. Dr. Rufus B. Hall of Cincinnati thinks that the old operation of anterior fixation or ventrosuspension of the uterus is not as popular as it was a few years since. Soon it will only be done in rare instances. He believes, however, that a modified operation, such as that advocated by the essayist, is based on rational surgical principles, and thinks that the author is working in the right direction.

Round Ligament Ventrosuspension of the Uterus.—Dr. D. Tod Gilliam of Columbus, Ohio, said that various devices have been resorted to for restoring and holding in place the retrodis-

placed uterus. All of these have been faulty and many absolutely prejudicial. The need of the hour is an operation that will utilize the natural supports of the uterus, that will insure a fair amount of mobility, that will adapt itself to the various functions of the uterus—pregnancy and parturition, and that will be lasting in its results and withal easy of execution. Profiting by the work of Ferguson along this same line, he has devised an operation which he thinks fulfils all these indications, and, as he believes, solves the problem most satisfactorily. The steps of the operation are as follows: (1) A median abdominal section, three or four inches in length, is made at the usual site between the umbilicus and pubis. (2) The adhesions are broken up and the fundus brought forward, after which the patient is placed in the Trendelenburg position. (3) Seize the round ligament on one side and bring it to the opening. This may be done either by the fingers or by the aid of forceps. (4) Carry a thread under the ligament at a distance of about one and a half inches from the uterus. The free ends of the thread are brought out of the abdomen and secured by clamp forceps. (5) The other round ligament is secured in the same way. (6) Expose the rectus muscle near the lower end of the incision by retracting its sheath and by rolling it out of its sheath on the tips of two fingers applied to the peritoneal surface under it. (7) Select a point one inch external to the margin of the incision and something over an inch above the pubis through which the perforating forceps specially devised for this purpose are thrust into the peritoneal cavity. The two fingers already in the cavity guard the instrument in its passage and place the thread which surrounds the ligament within its jaws. (8) The perforating forceps are now withdrawn, after removing the clamp forceps from the thread, and both thread and ligament are brought up through the perforated wound in the abdomen. (9) While the ligament is held taut, fasten it into the wound by a to-and-fro catgut suture passed deeply through the ligament and including the tissues on either side. (10) Treat the opposite side in the same manner and close the median abdominal incision. Rigid observance of all the rules of aseptic surgery is essential to prevent suppuration, and only a small loop of the ligament should be drawn up through the wound.

Composite Teratoma of the Ovary.—Dr. W. E. B. Davis of Birmingham, Ala., presented a specimen, saying he was in doubt as to the nature of the tumor which he presented, notwithstanding the fact that the above diagnosis was made by pathologists of high standing. Mrs. N., aged thirty-four years, married, was referred to him by Dr. E. G. Givhan of Montevallo May 3d. Mother of three children; had always menstruated regularly. Patient noticed a growth in the abdomen two years ago. She had menstruated in January before the growth was noticed and then missed her periods until March, at which time she menstruated or bled very freely for two weeks. She then missed periods until the following October, with no untoward symptoms except an attack of colic in August. The movements were noticed before August. After October she menstruated regularly until the following January, missed her periods then until October 24, 1899, when a child was born. She has not menstruated since. After the birth of the child at term, the tumor developed quite rapidly and on May 7, 1900, she was operated upon. Patient was discharged as cured June 9th. The tumor was quite large and had a pedicle nearly two inches in breadth and quite thick which was attached to the uterus. The fetus was so large and so well formed that the essayist was of the opinion that there had been an ectopic gestation, with rupture of the gestation sac and the expulsion of its contents into the cavity of a preexisting ovarian cystoma. From the history of the case the diagnosis had been made of an old ectopic pregnancy. He is still inclined to that opinion. Examination reveals a large, rounded, ovoid mass about the size of an adult head, covered by a moderately thin fibrous capsule. The capsule is continuous on one side with the tumor mass. The weight of the whole tumor is 2850 grams. Within the capsule are observed numerous sacs of variable size, which are rounded in contour and filled with a semi-fluid, gelatino-albuminoid tissue. Lying in one side of the tumor is part of a fetus. There are numerous bones of a fetus lying in the capsule. The upper part of the fetus is embedded in the solid portion of the tumor. This portion of the fetus is so intimately combined with the tumor that no sharp line of demarkation can be determined, one tissue gradually passing over into the other. There are numerous nodular and teat-like elevations, in some places covered by smooth skin (?), in others by skin(?) provided with fine, brownish, silky hair. Incision of these frequently reveals a whitish, cheesy substance resembling sebaceous secretion. The soft parts of the fetus are macerated and quite soft. The bones, such as the vertebræ, ribs, tibiæ, and metatarsal, are exposed in many places. There are two well-developed scapulæ (right and left), and to the left is attached some slight semblance of an extremity. Lying in a mass of muscular tissue to the left of the vertebral column is a long piece of bone resembling somewhat a humerus. Attached to the lower end and left side of the vertebral column by means of a flattened piece of bone is an almost perfect lower extremity. The femur is entirely covered by muscle, but the tibia is exposed at its lower end. Some of the phalanges are missing, but the foot is fairly well formed. Careful dissection of the upper part of the fetus fails to reveal any cranial bones attached to the vertebral column. There are two pieces of jaw-bone (inferior maxillæ) lying in the mass of tissue at this

place. They are well shaped, and a dissection of the right one shows rudimentary tooth sacs and a piece of nerve. The laminæ of the vertebræ have not united, so that the spinal canal is not complete and the spinal cord is seen lying in this position, with nerves arising regularly from each side. The bones lying free within the capsule are two parietal, an occipital, two pieces of frontal, abnormally united, several well-formed ribs, and five or six long bones of extremities. Parts of the lungs, liver, stomach, and about sixty centimeters of intestine are preserved.

Microscopic Examination.—Microscopic examination of sections of tissue selected from all portions of the tumor shows a very complex histological structure. Some portions of the tissue are composed of simple, fully-developed adipose tissue, enclosing occasional bands of unstriped muscular tissue, the whole surrounded by fully-developed and practically perfect skin. The skin contains sebaceous and sweat-glands in considerable quantities, and hair-follicles, with hairs in position. The sebaceous glands are larger than those found in normal skin. Other portions show true myxomatous tissue, still others cartilage, and the early stages of osseous development. Sections from the walls of cysts show the inner surface of them to be lined by almost true skin; the epithelial layers lie internally, lining the cyst, the papillary portion lying externally. Sebaceous and sweat-glands occur in these sections and frequently they may be seen opening into the cysts. Other cysts are lined by a simple layer of low cubical epithelium, either in uniform arrangement or thrown into folds or villi, similar to the formations found in uncomplicated cystic papillomatous adenoma of the ovary. The lining of other cysts is made up in some parts of flat or squamous epithelium, in other parts by columnar or cubical epithelium, of the glandular type, and frequently one kind of epithelium passes over into the other. Anatomical diagnosis: Composite teratome, combined with cystic adenoma of ovary.

Chronic Cystitis in the Female.—Dr. Charles Greene Cumston of Boston drew the following conclusions: (1) Sublimate instillations will often produce a very great improvement in the distressing symptoms met with in both tuberculous and non-tuberculous cystitis. In some cases a complete cure may be had. (2) When the instillations fail to produce the desired effect, curettement of the bladder is indicated in both tuberculous and non-tuberculous cystitis. (3) In gonorrheal cystitis instillations of sublimate are very efficacious. (4) Under favorable circumstances a radical cure of primary tuberculous cystitis may be obtained by curettement when the vesical lesions are localized and the kidneys free from the disease. Curettement per urethram will not allow the surgeon to reach the entire surface of the bladder, so that when the lesions are extensive they should be directly treated by suprapubic cystotomy. (5) Much relief may be afforded to a large number of patients suffering from tuberculosis of the bladder, but who on account of the advanced stage of generalized infection are in no condition to undergo a more radical operation. (6) When cystitis is due to a prolapsus of the genital organs, and when hysteropexy, combined with anterior and posterior colporrhaphy, does not relieve the bladder symptoms, curettement of the bladder, followed by sublimate instillations, is the proper treatment.

Dr. A. Goldspohn does not believe that infiltrations, etc., of the bladder can be recognized by the curette at an early stage of the disease process. With this instrument the operator cannot detect beginning ulcerations or papillomatous growths in this organ. The bladder being a membranous organ, curettement of it is entirely different from that of the uterus, in that the operator does not receive the tactile information or intelligence from this instrument in the bladder that he obtains from it in curetting the uterus. Scraping the bladder, therefore, is done largely at random, without any touch sensation to govern the operator as to how little or how much surface he shall curette. Under such circumstances it is not rational to assume that the mucous lining of the bladder will be evenly and uniformly curetted. Uneven surfaces or small areas would be left untouched. In the treatment of infectious cystitis, not tuberculous, he has obtained good results from a solution of one-half to one per cent. of oil of cloves in water. Dr. J. Henry Carstens agrees with the last speaker that there are certain points in the bladder in the class of cases under consideration that cannot be reached by the curette. He has had cases of tuberculous, gonorrheal and septic infections of the bladder which have yielded to the judicious application of permanganate of potash. Dr. James T. Jelks concurred in the statement of Dr. Carstens that permanganate of potash is an invaluable remedy for infective disease of the bladder, particularly of the gonorrheal variety. A solution of 1-6000 is strong enough to begin with, the strength being increased in accordance with the indications of the particular case. Dr. T. J. Crofford of Memphis has performed curettage of the bladder several times. If the inflammatory process is confined to the neck or thereabouts, there is very little difficulty attending the curettement of that area of surface. No inflammatory zones would be left to cause further trouble. Dr. Cumston in closing referred to the pathology of bladder lesions and said they were almost always situated in the trigonum, consequently this is the portion of the viscus which the operator should strive to reach. If the whole bladder surface is involved, suprapubic cystotomy is the operation of choice, and curettement in such a case would do very little, if any, good. He uses the cystoscope in the treatment of this class of cases.

Perforated Gastric Ulcer with Remarks.—Dr. Henry Howitt of Guelph, Ontario, read this paper. The first two cases occurred years ago before the operative procedures were commonly known and had the usual termination, one dying within twenty-four hours from the commencement of the illness without having had a single symptom indicating the existence of the trouble. The other two reported by him are of recent date and the patients were saved by timely operations. In one the operation was devoid of any serious difficulty, but in the other the abdomen contained gas and a large amount of pus, the colon was enormously distended, requiring to be opened, and collapsed before the stomach could be reached. There existed also the remains of a ruptured abscess cavity below the transverse portion of larger bowel, the walls of which were formed by it together with the coils of small intestine and omentum. This had its origin probably in a slight leakage which occurred days before the final rupture. The orifice of the ulcer was of sufficient caliber to admit his little finger, and was situated in front close to the pyloric valve. The surrounding parts were so thickened, dense and nodular as to exactly resemble carcinoma of the pylorus and adjacent part of the stomach. A section nearly two inches in length had to be removed before the ulcer could be closed. The intestines were previously eviscerated to permit of the room necessary to reach the part and to expose the pools of pus in the pelvic flanks and other places difficult to reach. The upper portion of the jejunum was anastomosed by means of a Murphy button to the anterior wall of the stomach. After the anastomosis was completed, the arm of intestine above was stitched to the wall of the stomach an inch or more to the right and a little above the line of the button. This procedure in his opinion overcomes the acute angle and its ill-effects. Drainage-tubes were inserted through perforations made in flanks well to the back and in the lower abdomen close to the pelvis, to the outer side of the right rectus muscle. The sutures were all removed except two in the middle of the wound opposite the umbilicus on the seventh day. Three hours later the patient had a sneezing fit, and the wound tore open from the upper angle to the umbilicus, exposing the situation of anastomosis, and coils of bowel protruded. It was restitched an hour later without anesthesia, and no ill-effects followed. The patient made an uneventful recovery, and is now for the first time in eighteen years free from gastric distress.

Dr. W. E. B. Davis has never operated for ulceration of the stomach, attended by perforation. He had encountered two cases which he should have operated upon had the symptoms been sufficiently marked to warrant operative procedure, but they were not, and he did not feel therefore emboldened to undertake it.

Dr. Edwin Ricketts narrated the case of a woman, forty-eight years of age, who had had a gastric ulcer for three years. Under rectal alimentation she gained sixty pounds in flesh. Subsequently she committed some indiscretion in diet, was again taken sick, and consulted another physician, who made a diagnosis of cancer of the pylorus. She went from bad to worse, and finally died. Post-mortem examination revealed a perforating gastric ulcer the size of a lead pencil, situated on the anterior surface near the pylorus. Dr. A. Vander Veer of Albany spoke of two cases of gastric ulcer which ultimately resulted in carcinoma of the pyloric end of the stomach. From the number of cases in which he has done gastrointestinal anastomosis, he is satisfied that he has had to deal with the cicatrices resulting from gastric ulcers in many instances.

Surgery of the Gall-Bladder.—Dr. A. Vander Veer of Albany said that no great reliance is now placed upon jaundice as a positive symptom. Four interesting and instructive cases are reported and the following conclusions drawn: (1) An early diagnosis is important. (2) In suppuration of the bladder with adhesions, a most thorough examination should be made from within by digital exploration and use of the probe for any possible deep-seated calculi. (3) In prolonged operations upon the common duct or hepatic ducts, where adhesions are present and it is difficult to close the incision after removal of the calculus, drainage through the peritoneal pouch by means of the lumbar stab is advisable. (4) When the patient is suffering seriously from cholemia, with marked ecchymotic spots over the body, intense itching, the blood examined, and found in a septic condition, an operation is not to be encouraged. (5) General practitioners as well as the surgeon should place more earnestly before the patient and friends the dangers of repeated attacks of gall-stone irritation resulting in cancer of the ducts, stomach or liver.

[To be continued.]

NEW YORK ACADEMY OF MEDICINE.

Stated Meeting, Held May 3, 1900.

The First Vice-President, William H. Katzenbach, M.D., in the Chair.

Hyperchlorhydria.—Dr. Max Einhorn said that some fifteen or twenty years ago it was held that disturbances of the stomach were generally supposed to be conditions in which the secretions were deficient. When dyspepsia was present hydrochloric acid was always given to supplement the secretions. Later investigations and study of the gastric secretions in normal and diseased states showed that the secretion of hydrochloric acid might be above normal in pathological conditions. This was thought to be exceptional, but statistics have shown that the percentage of the cases of increased secretion is

not small. It was found that conditions existed in which secretion continued even when there should be none at all, that is in an empty stomach. The speaker said that he did not wish to take up the whole subject of hypersecretion, however, but merely that of hyperacidity.

Proportion of Cases of Hyperchlorhydria.—Dr. Einhorn has tried to learn the proportion of cases of hyperchlorhydria to general digestive ailments. In two years' experience he finds that half his patients show a greater degree of acidity than normal. Moreover, the proportions are not alike in every city. In the smaller cities and towns the cases of hyperchlorhydria become less and less in number. In the country they are almost unknown. It is characteristically the disease found among the so-called better classes, the business man, the man of many cares, the intellectual man, women who are active socially and intellectually. This explains to a certain extent the discrepancies between the large cities and the smaller places in the statistics of this disease.

Characteristic Symptoms of Hyperchlorhydria.—The hyperchlorhydria may be recognized not only by an examination of the gastric contents, but by clinical symptoms and the general appearance. The patients are usually well nourished, plump, and appear in good condition. Only exceptionally a run-down case presents itself. They suffer from pain an hour or two after eating, the immediate effect of the taking of food being a feeling of relief. Sometimes this feeling of distress and pain occurs only after certain meals. For instance, the patient may be well after breakfast and luncheon but suffer after dinner—the heaviest meal of the day. A number of cases find that they are relieved after belching up gas. Others have a dulness over the pit of the stomach and occasionally suffer from water-brash. Another and smaller group complains of regurgitation. Some have a burning sensation along the esophagus, but nothing comes up. There are again rarer cases in which there is no pain, but in which there is complaint of dizziness one to two hours after meals, or of a feeling of fright at that time. That this dizziness and fright are due to hyperchlorhydria is proved by the fact that they disappear with treatment for that condition. Sometimes hyperchlorhydria may be mistaken for genuine angina pectoris, the symptoms are so much alike, there being dizziness, fright, a little difficulty in breathing and pain in the precardia. Sometimes there are no stomach symptoms, but severe headaches an hour or two after meals. These, too, disappear with treatment for hyperchlorhydria. In 90 per cent. of the cases where the symptoms indicated are present hyperchlorhydria may be assumed. In rare cases achylia gastrica, where there is no juice at all, may present the symptoms of hyperchlorhydria.

Anomalous Symptoms.—The appetite is usually good and the food is taken with relish. A small fraction has a hungry feeling an hour or two after eating and at other unnatural times. The thirst, however, is not increased. The bowels are nearly always irregular. Some suffer from obstinate constipation, which increasing doses of cathartics do not allay, though this constipation disappears with treatment for hyperchlorhydria. A smaller proportion, perhaps 5 per cent., suffer from diarrhea. There are cases, however, in which a positive diagnosis can only be made by an examination of the contents of the stomach.

Hyperchlorhydria Without Symptoms.—Hyperchlorhydria may exist without giving rise to symptoms. Dr. Einhorn has had patients in whom the symptoms ceased entirely, yet an examination of the stomach-contents later showed the hyperacidity to be just as great as ever. In such cases, outside of care of the diet, there should be no treatment. Sometimes hyperchlorhydria seems to be an anomalous condition of the stomach normal to a particular individual.

Causes of Hyperchlorhydria.—It has been thought that hyperchlorhydria is due to some anatomical lesion, but as the disease does not have a fatal termination there could be no autopsies and there was much speculation with regard to its morbid anatomy. Hansemann had a patient suffering from hyperchlorhydria who died suddenly of pneumonia. The stomach was found to be normal. The mucous membrane was examined microscopically, but no lesions were found. Dr. Einhorn personally has examined small pieces of the mucous membrane of living patients, and has found strongly hypertrophied glands, but every organ that is overworked hypertrophies, and this condition of the mucous membrane must be looked upon as a secondary, not a primary condition. Dr. Einhorn thinks hyperchlorhydria a functional disease, the disturbance in the secretions being due to nervous derangement, as is shown by its prevalence among the classes subject to nervous worry and strain and excitement. Besides the nervous influences, to a slighter degree tobacco or alcohol or both may contribute to the disease.

Hyperchlorhydria and Ulcer of the Stomach.—Hyperchlorhydria exists in ulcer of the stomach. It is a matter of controversy whether the mucous membrane in case of ulcer is more vulnerable and excited, or whether the ulcer is the cause of the hyperchlorhydria. Dr. Einhorn does not think that the ulcer is the cause, as he has found ulcer of the stomach in which there was subacidity or no acidity at all. It may be said to be true, however, that where there is chronic hyperchlorhydria ulcers develop more easily.

Differential Diagnosis.—In the diagnosis of hyperchlorhydria it is sometimes difficult to distinguish between hyperchlorhydria alone and the disease in connection with other pathological conditions. There may be an ulcer or gall-stones may be present and the symptoms be similar to mere hyperchlorhydria. If there is vomiting of blood, pain occurs immediately after taking food and the area of pain is circumscribed; it is probable that there is an ulcer in addition to the hy-

perchlorhydria which an examination of the contents of the stomach will show. The evidence of the presence of an ulcer may be found in the resistance of the conditions to treatment for simple hyperchlorhydria. In a case of hyperchlorhydria which does not yield after three or four months of treatment the conclusion that there is an ulcer is perfectly reasonable. Hyperchlorhydria also frequently exists in connection with gall-stones. In the attacks due to gall-stones the pain comes on very suddenly and is extremely severe. They are not dependent on meals. These symptoms make the differentiation of gall-stones from ulcer easy as a rule. Certain cases will however present serious difficulties.

Treatment.—Dr. Einhorn finds it very satisfactory as a rule to treat hyperchlorhydria. It is a condition which yields with gratifying readiness to rational therapy. Diet is of course the most important consideration. There was a time when physicians prescribed meats, little fat, no carbohydrates, no starchy foods, the reason being that starchy foods irritated the stomach and were not digested in the presence of an excess of acid. This exclusive meat diet is being abandoned, however. Starchy foods have an important part in the sustenance of the body and, moreover, their effect in the stomach is not so serious as was thought, for their digestion depends very largely upon the intestinal juices. Partly for this latter reason just the reverse of the exclusive meat diet has also been held to be the right thing. Because meat increases the gastric secretions it has been excluded entirely by some in the treatment of hyperchlorhydria and starchy foods only have been given with a little milk. Dr. Einhorn finds a medium course between these extremes the most satisfactory. It is not safe to deprive people of so important a group of foods as the starches in a treatment which must be kept up for months, sometimes for years. Dr. Einhorn tries to limit the indulgence in the foods that seem most irrational and prove to be irritating, but does not entirely exclude anything except acids. He permits the patient to have meats, preferably the tender kinds and those not too highly seasoned, milk, bread, butter, and sugar. Of the starchy foods he particularly restricts potatoes. The acids can safely be eliminated as they supply no element of nourishment. He directs the patients to eat smaller meals and to eat oftener. In this way the energy of the stomach is saved. The food relieves the symptoms for a time, because the albumin in it takes up the acids and so checks the effect of the hyperacidity on the mucous membrane. He insists that the patient eat bread and butter, or a bowl of milk and bread, between each meal, and if the hour for retiring is late a bowl of milk and bread before going to bed, in order to avoid waking up hungry and uncomfortable during the night. He objects to any food that is highly seasoned. Recent experiments have shown that sugar has a tendency to diminish acidity and sugar may therefore be taken with safety. The fats, cream and butter are especially beneficial in reducing acidity.

Medicinal Treatment.—The alkalies should be given at the time when the acidity is highest, about two hours after meals. Bicarbonate of soda, given in doses of one-half to one teaspoonful, gives good results. For the constipation, rhubarb and soda, or rhubarb and magnesia may be given; if there is diarrhea instead of constipation the soda only should be given. The bromides are useful along with the alkalies where there is a nervous and excited condition. Dr. Einhorn does not approve of belladonna or atropine. The disease requires remedies which can be given with safety for long periods of time. The washing out of the stomach is not essential. He prefers to spray the stomach with nitrate of silver, as in this way a smaller amount of the drug can be used and it is not necessary to get it out again, as is the case when the stomach is washed. He finds the use of the electric current beneficial. The faradic as well as the galvanic current should be used.

REVIEWS.

Transactions of the New York State Medical Association. For the Year 1899. Volume XVI. Published by the Association.

THIS volume of Transactions contains several series of articles that it is well worth practitioners' while to know where they may be obtained for reference. There is a discussion on expert evidence containing articles by such well-known legal authorities as Justice Bartlett of the Supreme Court, ex-Judge Joseph Daly of New York, Charlton T. Lewis, Esq., William A. Purrington, Esq., and Theron A. Wales, Esq.

The feature of the volume, however, is the discussion on typhoid fever, which occupies nearly 150 pages. The various phases of the subject are presented by such distinguished specialists as Dr. William Osler of Baltimore, Dr. W. H. Thomson of New York, Dr. Reginald Fitz of Boston, Dr. A. A. Smith, Dr. Abraham Jacobi, Dr. E. G. Janeway, Dr. Herman M. Biggs and Dr. William H. Park of New York. The surgical aspects of the disease are presented by Dr. W. W. Keen of Philadelphia. On the whole, it may be said of this volume that it is one of the best representatives of thoroughly scientific work issued by any of the State Medical Associations in the country.

Report of the Mortality Records of the Mutual Life Insurance Company of New York for Fifty-six Years (1843 to 1898). By ELIAS J. MARSH, M.D., and GRANVILLE M. WHITE, M.D., Medical Directors. New York: The Mutual Life Insurance Co., 1900.

THIS report will be read with interest by those who have to do with life-insurance examinations

as well as by those who are concerned for anthropological reasons with the percentages of deaths at different ages. In the first table presented it is seen that under forty-five years of age, the greatest incidence of mortality is from tuberculous disease, there being 3307 deaths from consumption out of a total of 13,623; between the ages of forty-five and sixty apoplexy and arterial diseases lead in the causes, with digestive diseases next and consumption and heart disease important factors; above sixty years of age the cardiac diseases and arterial disturbances overbalance the other causes of death, as one would expect. Bright's disease, according to this table, kills about an equal number of persons in the periods between forty-five and sixty and above sixty years of age. The acute infectious diseases are prominent factors of death below forty-five and appear to be equally virulent above sixty, while between these years their mortality is not so high.

Eighty-one deaths are reported as due to abortion and puerperal diseases, although the tables do not state the actual cause of death, whether sepsis, convulsions or other puerperal complications. The majority of these deaths occurred within the first year in which the policy was issued and for this reason the company does not solicit for insurance pregnant or newly-married women.

There are thirty-five tables presented in which the mortality is shown in different States and countries, in different diseases at different ages, age percentages, disease percentages, etc. The work is monumental and is carried out along the lines of the Bertillon system. It is interesting as a study and useful as a reference work.

Atlas and Epitome of Special Pathologic Histology. By Docent DR. HERMANN DURCK, Assistant in the Pathologic Institute, Prosector to the Municipal Hospital in Munich. Authorized Translation by Ludwig Hektoen, M.D., Professor of Pathology in Rush Medical College. Volume I. Circulatory Organs, Respiratory Organs, Gastro-intestinal Tract. With 62 colored plates and 158 pages of text. Philadelphia, W. B. Saunders, 1900.

AFTER a brief review of the normal histology of an organ, the author compares the pathological condition of this with that of other organs or of the whole body, and then cites the etiology of the individual cell-changes, and describes the microscopical appearances of the various cut sections. These latter are illustrated as ordinary stained microscopical sections, two or more appearing on each colored plate. Their distinctness of delineation and accuracy of coloring is a credit to the publishers. This volume includes the heart, pericardium, vessels, lympthatic glands, spleen, bone-marrow, nose, larynx, trachea, bronchi, lungs, pleura, thyroid, mouth, pharynx, esophagus, salivary glands, stomach, intestines and peritoneum.

Food for the Sick and How to Prepare It. By EDWIN CHARLES FRENCH, M.D. John P. Morton and Company, Louisville, 1900.

THIS little volume is a very useful and practical collection of recipes that have been gathered from the head-nurses of hospitals all over the country. Some of them are said to be contributed by well-known physicians. None of the recipes are to be found in the ordinary cook-book and each recipe is said to have been thoroughly tried by a competent cook. The volume is calculated to be of the greatest assistance to those who have the care of convalescents. Its perusal cannot but prove suggestive to physicians as a guide to the directions they may give for the feeding of patients.

A Manual of Obstetrical Technique as Applied to Private Practice. With a Chapter on Abortion, Premature Labor, and Curettage. By JOSEPH BROWN COOKE, M.D., late Attending Physician to St. Mary's Free Hospital for Children, Out-Door Department; late Attending Physician to the Northwestern Dispensary, Department of Diseases of Children, etc. Philadelphia and New York: J. B. Lippincott Company, 1900.

THIS little book is exactly what the title indicates it to be and what the author intended it should be—a manual describing in detail the technique of caring in private practice for a pregnant woman during the whole course of her pregnancy. The subject is considered solely from the standpoint of a physician treating a private case in her own home, and shows very clearly that such cases, with a little care and forethought, can be treated as well in private households as in a well-appointed lying-in hospital, no matter what emergency may arise. The key-note of the whole thing, of course, is to be thoroughly aseptic and to be ready for any emergency. How to be always aseptic and always ready the author tells in detail. He describes how the lying-in chamber should be prepared, and also the physician's outfit. This outfit consists of two distinct parts, the obstetrical box which is sent to the patient's house two or three weeks before labor is expected, and the obstetrical bag which the physician takes with him to the case. The details of every step in normal labor, and also in forceps delivery, version, craniectomy, perineorrhaphy, trachelorrhaphy, and symphysiotomy are described. Asepsis and antisepsis are vigorously insisted upon in every procedure.

The author makes numerous suggestions which many general practitioners might well adopt. To young practitioners just beginning, for whom the book is intended, it will prove of value, as every detail in the conduct of a case of pregnancy, from the initial visit and examination at the beginning of pregnancy to the delivery of the child and the convalescence of the mother, is carefully and minutely described.

The book is written clearly and concisely, and touches upon all those "little things" which go to make up the important whole, but which are not usually mentioned in text-books and which the young practitioner usually has to learn "by experience." The volume is illustrated by numerous excellent photographs of the different methods of examination and delivery of the pregnant woman.

Diseases of the Eye. By EDWARD NETTLESHIP, F.R.C.S., Ophthalmic Surgeon to St. Thomas' Hospital, London; Surgeon to the Royal London (Moorfield's) Ophthalmic Hospital. Revised and Edited by Wm. Campbell Posey, A.B., M.D. Sixth American from the Sixth English Edition. Small 8vo., pp. 560. Lea Brothers & Co., Philadelphia and New York, 1900.

NETTLESHIP'S text-book has long been recognized as one of the best of the smaller text-books on the eye, and the present edition is considerably augmented and brought up to date, while the introduction of a number of special features considerably enhances the value of the work.

Normal Histology. By EDWARD K. DUNHAM, M.D., Professor of General Pathology, Bacteriology and Hygiene in the University and Bellevue Hospital Medical College. New Second Edition. Lea Brothers & Co., Philadelphia and New York, 1900.

DR. DUNHAM'S book on histology has heretofore contained pathological as well as normal histology. In issuing the second edition a change is made that presents the normal histology in a separate volume. The former edition of the book is so well known that the present volume needs no words of commendation. Dr. Dunham's style is eminently concise and clear. It is a distinct pleasure to read his lucid English. Text-books are often couched in a style so lacking in clearness and precision and in a phraseology so labored that the present work appears by contrast to have special merit. Medical writers generally are so little commendable for anything like grace of style that it is to be hoped that the rising generation of medical men influenced by text-books like this shall present what they have to say with less waste of words than has heretofore been the custom. Passages like the following commend themselves as models of terse descriptive writing: "The red corpuscles are soft elastic disks, with a concave impression in both surfaces. They are slightly colored by a solution of hemoglobin and are so abundant that their presence gives the blood an intense red color; but when viewed singly under the microscope each corpuscle has but a moderately pronounced reddish-yellow tinge. The hemoglobin solution is either intimately associated with the substance composing the body of the corpuscles, called the stroma, or it occupies the center of the corpuscle and is surrounded by a pellicle of stroma."

The illustrations in the book have the very praiseworthy quality that they all really illustrate. None of them are introduced merely for the purpose of increasing the number of illustrations in the book without adding any clearness to the text. Altogether there are 244 illustrations to 263 pages of text.

BOOKS RECEIVED.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Twelfth Session. Published by the Association.

REPORT OF THE MORTALITY RECORDS OF THE MUTUAL LIFE INSURANCE COMPANY OF NEW YORK FROM 1843 TO 1898. By Elias J. Marsh, M.D., and Granville M. White, M.D., Medical Directors. Published by the Mutual Life Insurance Company of New York.

CANCER OF THE UTERUS; Its Pathology, Symptomatology, Diagnosis, and Treatment. By Thomas Stephen Cullen, M.D., (Toronto). Illustrated. D. Appleton & Company, New York.

MEDICAL DIAGNOSIS. A Guide to the Knowledge and Discrimination of Disease. By J. M. Da Costa, M.D., LL.D. Illustrated. Ninth Edition, Revised. J. B. Lippincott Company, Philadelphia and London.

FOOD FOR THE SICK AND HOW TO PREPARE IT. With a Chapter on Food for the Baby. By Dr. E. C. French. 12mo., 171 pages. John P. Morton & Company, Louisville. $1.00.

CONTRIBUTIONS FROM THE WILLIAM PEPPER LABORATORY OF CLINICAL MEDICINE. Dr. Alfred Stengel, Director. Quarto, 480 pages. Illustrated. University of Pennsylvania, Philadelphia.

TRANSACTIONS OF THE ASSOCIATED PHYSICIANS OF LONG ISLAND. June, 1898, to January, 1900. Vol. I. 8vo., 142 pages.

NORMAL HISTOLOGY. By Dr. E. K. Dunham. Second Edition. 8vo., 319 pages. Illustrated. Lea Brothers & Co., Philadelphia and New York.

A MANUAL OF MEDICINE. Edited by Dr. W. H. Allchin. Vol. I. General Diseases. 8vo., 442 pages. Illustrated. The Macmillan Company, London and New York. $2.00.

MIKROSKOPIE UND CHEMIE AM KRANKENBETT. Von Dr. Hermann Lenhartz. Dritte Auflage. 8vo., 360 pages. Illustrated. Julius Springer, Berlin.

CONTRIBUTIONS TO THE SCIENCE OF MEDICINE. Dedicated by his pupils to William Henry Welch on the Twenty-fifth Anniversary of his Doctorate. Quarto, 1066 pages. Illustrated. The Johns Hopkins Press, Baltimore.

A TEXT-BOOK OF PRACTICAL THERAPEUTICS. By D. Hobart Amory Hare. Third Edition. Thoroughly Revised and Rewritten. 8vo., 798 pages. Illustrated. Lea Brothers & Company, Philadelphia and New York. $4.00.

A MEMOIR OF HENRY JACOB BIGELOW, A.M., M.D., LL.D. In four volumes. Volume I., Memorial Addresses of Friends and Associates; Volume II., Orthopedic Surgery and Other Medical Papers; Volume III., Dislocations and Fractures of the Hip, Litholapaxy; Volume IV., Anesthesia, Addresses, and Other Papers. Little, Brown & Company, Boston, 1900.

GRUNDRISS DER THEORIE UND PRAXIS DER SCHATTENPROBE (SKIASKOPIE.) Von Dr. Otto Neustaetter. 12mo., 59 pages. Illustrated. J. F. Lehmann, Munich. 1 mark 20 pf.

TRANSACTIONS OF THE CHICAGO PATHOLOGICAL SOCIETY. From May, 1897, to June, 1899. Vol. III. 8vo., 553 pages. Illustrated.